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Stanisław BŁESZYŃSKI

Revision of the World Species of the Family *Crambidae* (*Lepidoptera*).  
Part I. Genus *Calamotropha* ZELL.

Rewizja światowych gatunków rodziny *Crambidae* (*Lepidoptera*).  
Część I. Rodzaj *Calamotropha* ZELL.

Ревизия всемирных видов семейства *Crambidae* (*Lepidoptera*).  
Часть I. Род *Calamotropha* ZELL.

The present study is the first volume of a Revision of the World species of the family *Crambidae*. It includes the genus *Calamotropha* ZELL. The general characteristics of the whole family, as well as general conclusions concerning that group of insects will be considered in the last volume of the revision.

Thanks to my sojourn at the British Museum (Nat. Hist.) in London, the Museum National d'Histoire Naturelle in Paris, the Naturhistorisches Museum in Vienna, the Naturhistoriska Riksmuseet in Stockholm and the Museul „Gr. Antipa“ in Bucarest I was able to examine type-specimens of most of the species treated in this volume. The types of some other species have been borrowed for study from the Koninklijk Museum van Congo in Tervuren, the Zoologisches Museum der Humboldt-Universität in Berlin and the Deutsches Entomologisches Institut in Berlin. Other valuable material has been borrowed from the mentioned institutions, as well as from the Institute of Zoology of the Polish Academy of Sciences in Warsaw, the Zoologische Sammlung des Bayerischen Staates in München, Dr. H. G. AMSEL of Karlsruhe, Mr. H. INOUE of Fujisawa and Dr. S. TOLL of Katowice. Dr. A. DIAKONOFF of the Rijksmuseum van Natuurlijke Historie in Leiden has kindly sent me the photographs of the types and their genitalia of the species of the genus *Calamotropha* ZELL. described by SNELLEN. Mr. M. OKANO of Morioka, Japan has kindly sent my very valuable material concerning some species of the genus in question occurring in Japan.

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## GENERAL PART

### HISTORICAL

Of several hundred species constituting a complex of genera referred to my recent papers as „Generic Group *Crambus* F.“ a cluster of 81 species is selected that appear to be a rather close group and congeneric with *Tinea paludella* HBN. Of these 31 species are described as new to science. The species considered in this paper are distributed over the Old World. Of the New World species some seem to be rather nearer to the group under consideration than to the genus *Crambus* F. and allies, however, too little material is available and, therefore a study will be possible only at some future time. None of those New World species shows a great relationship to the species from the Old World, and they require to be placed in separate genera. The ranges of the genera of New World and *Calamotropha* ZELL. do not overlap with each other.

The genus *Calamotropha* ZELL. was erected in 1863 by ZELLER in his monograph „*Chlonidarum et Crambidarum Genera et Species*“. This genus was established for three species, namely, *Calamotropha paludella* (HBN.), *C. aureliella* (F. R.) and *C. atkinsoni* ZELL. Both *C. paludella* (HBN.) and *C. aureliella* (F. R.) were known from Europe and *C. atkinsoni* ZELL. was newly described by ZELLER from India. The association of the three above mentio-

ned species in one genus seems to be correct. On the other hand, it should be indicated, that only two other species of *Crambidae* which have been treated in ZELLER'S work are congeneric with the genus *Calamotropha* ZELL. (*Chilo unicolorellus* ZELL. and *Chilo torpidellus* ZELL.).

The WALKER 27th part of „List of the Specimens of Lepidopterous Insects in the Collection of the British Museum“ was also published in 1863. In this volume WALKER erected a new genus *Myzea* WALK. for a unique species *M. tonsalis* WALK. coming from Borneo. Both *Calamotropha* ZELL. and *Myzea* WALK. are synonyms, as *C. paludella* (HNB.) [*C. paludella* (HBN.) is the generic type of the genus *Calamotropha* ZELL. by a subsequent designation by the writer (1953: 101)] and *M. tonsalis* WALK. appear to be congeneric. However, there arises a question concerning the exact date of publication of ZELLER'S and WALKER'S work, as the two have been published in the same year. The opinions concerning the date of issue of both above mentioned works are different. The matter was considered by FERNALD (1889: 215 & 216) who proves that the ZELLER work was published earlier in 1863 than the WALKER 27th volume of his X „List...“. However, FERNALD in his „The *Crambidae* of North America“ (1906: 7) mentions that ZELLER'S work was not published till July 1863, whilst WALKER'S catalogue was published in April 1863 (the exact date of the issue of the WALKER'S work is 18th April 1863). Consequently one can judge that the name *Calamotropha* ZELL. is a junior synonym of *Myzea* WALK. However, according to the recent regulations of the International Comission of Nomenclature, the names which have been in common use through a 50 years period should be validated. In fact, the name *Calamotropha* ZELL. has been used by several author's, whilst the name *Myzea* WALK. has never been mentioned since the WALKER publication.

The genus *Calamotropha* ZELL. has been used by only a small number of workers and it has usually been sunk under the genus *Crambus* F. s. l. The latter opinion has been due to the similar venation in the wings that appear in both genera, *Calamotropha* ZELL. and *Crambus* F. In 1953 I validated *Calamotropha* ZELL. confirming ZELLER'S correct decision in this matter.

#### TAXONOMY

It is here necessary to take into consideration some questions of taxonomy, especially those in regard to the grouping the species in the genera. The matter has referred to in Part XIV of my Studies on the *Crambidae*, however, clarification of some problems is necessary as the establishing of generic criteria regarding the World Fauna is much more difficult than for only the European or Palaearctic species. As has been pointed out in the mentioned paper, the old systematics of *Lepidoptera* regarding the generic division was based mainly on the differences in the wing venation. Mainly the species having similar venation have been placed in one genus. Of course, in some instances, such

a rule has allowed the grouping of species closely related to each other, however, it has had a practical rather than scientific significance. In consequence, very many absurd genera have been erected the scientific value of which is nil, introducing much confusion for subsequent workers. I believe, one genus should group the species very closely related to each other and should be monophyletic. However, what proof have we that species showing a similar wing venation are really monophyletic? Such theories appear to be very doubtful, and, I believe, in many instances quite imaginary. The treating of similar venation as a criterion of close relationship is of very doubtful significance as that feature has only a quantitative character. Besides each character should be taken into consideration with the association of a complex of other characters of the moth and not apart from them. However, on the other hand, we must look at the venation of various genera in the greater groups of moths, e. g. *Pyraloidea*. Some characters, as the presence or absence of an individual vein may be, of course, of great taxonomic significance, e. g. the absence of  $r_5$  in the forewing as a rule in the members of *Phycitidae*. This separates that family from *Crambidae*, the latter having always  $r_5$  present (the absence of  $r_5$  in the forewing seems to be a progressive feature and the *Phycitidae* most probably derived from the *Crambidae*; the former shows most developed chaetosemae among *Pyraloidea*, an organ lacking in the primitive *Pyraloidea*, e. g. *Pyraustidae*). However, we may not attribute the same value to the presence or absence of each vein. In such a way we could place in an imaginary close group all the species of various families that are wanting  $cu_2$  in the hindwing. Consequently we should erect an absurd genus containing species very distantly related to each other. The reduction of  $cu_2$  from the hindwing originated in very many individual groups of *Pyraloidea* quite independantly from each other, and this character is therefore a convergent one. The same argument may be used regarding the situation of  $r_5$  in the forewing of *Crambidae*. Most species having that vein stalked with  $r_3$  and  $r_4$  have been for a long time combined into one genus, namely, *Crambus* F. (sensu lato). However, the above feature is obviously of no greater significance in regard to the true relationships among *Crambidae* but presents a rather convergent feature possibly originating several times in the *Crambidae*. It is due to the rather small number of combinations of the venation that appear in the *Pyraloidea*. For example, let us look at the course of the veins in the members of *Pyraustidae* or *Scopariidae*. The venation of the latter is quite similar to that in *Crambidae*, that of the former being different only by the presence of a loop of  $ax_1$  in the forewing. Owing to the similarity of the venation, some genera have been quite incorrectly placed, e. g. *Orthomecyna* BUTLER in *Pyraustidae* and *Mestolobes* BUTLER in *Scopariidae*. Subsequent workers have pointed out the erroneous familiar placement of these genera and have transferred them to the *Crambidae* (ZIMMERMANN, 1958: 279, 286).

Summarizing the above data, we see that the consideration of similar venation cannot be used as the only generic criterion. It is necessary to take

into consideration a complex of features that are present in the members of the genus in question. However, very many exceptions from such a rule are to be noted, as intergrade species between genera occur. As a good illustration of this fact we cite some members of *Calamotropha* ZELL. e. g. *C. aureliella* (F. R.), or *C. fulvifusalis* (HMPS.). The former show fully developed ocelli, a character quite atypical for *Calamotropha* ZELL. the members of which in most instances have no ocelli. However, other characters of that species are of *Calamotropha* ZELL. and the species does not require to be placed in a separate genus. *C. fulvifusalis* (HMPS.) has no ocelli but the frenulum of the female is double, a feature met with only in a few representatives of *Calamotropha* ZELL. It seems that it would be impossible to use the word „always“ but „in most instances“, in regard to presence or absence of any feature that characterizes a genus.

We consider the reduction of the veins as an evolutionally more recent feature. I believe that the removing of vein  $r_5$  in the forewing from a free position to the common stalk with  $r_3$  and  $r_4$  points to a relatively phylogenetic youth of the moths having such a character. So, we may consider the *Crambidae* having  $r_5$  free in the forewing as more primitive than the genera such as *Crambus* F. and allies. This removing of  $r_5$  to the common stalk with  $r_3$  and  $r_4$  seems to be an intergrade stage to the total reduction of that vein that appears in the representatives of *Phycitidae*. Consequently, we may consider the genera *Chilo* ZCK. or *Diatraea* GUILD. (the members of these genera show  $r_5$  free in the forewing) as more primitive than the genus *Calamotropha* ZELL., *Crambus* F. and allies. Further, we may consider the simple frenulum of the female and the reduction of ocelli as the progressive features in relation to the double or triple frenulum and fully developed ocelli. *Phycitidae* show frenulum of the female simple and *Pyraustidae* have frenulum of the female double. It is of interest to note that many *Crambidae* with the triple frenulum in the females show  $r_5$  of the forewing free. Such species have also very wide labia in the female genitalia, similar to those appearing in the *Pyraustidae*, a family that is considered to be more primitive than *Crambidae*. For example, the female genitalia of the members of the genera *Chilo* ZCK. or *Diatraea* GUILD. resemble those of the species of *Pyraustidae*. Such a type of genitalia is characterized by its very broad labia and rather little specialization of the ostium bursae and ostium pouch. The genital opening in the species of the genera *Chilo* ZCK. and *Diatraea* GUIL. is situated in the eighth sternite of the abdomen, whilst in the members of the genus *Calamotropha* ZELL. the genital opening is free, being removed beyond the eighth sternite. The species of the genus *Chilo* ZCK. have fully developed ocelli which are wanting in the representatives of the genus *Diatraea* GUILD. The latter is most probably a New World derivative of the genus *Chilo* ZCK.

There arises a question in regard to the relationship of the genus *Calamotropha* ZELL. to the generic group *Crambus* F. and, on the other hand, to other genera of the family *Crambidae*. As mentioned below, the species of

the genus *Calamotropha* ZELL. show, in most instances total reduction of ocelli, triple frenulum in the female, wide labia and free genital opening in the female genitalia. The ostium pouch is often little specialized. However, on the other hand, the male genitalia of the members of the genus *Calamotropha* ZELL. seem to be rather highly specialized and characterized by the large and broad vinculum that appears in the species of the genus *Crambus* F. and allies. The genus *Crambus* F. s. str. and allied genera have always well developed ocelli, simple or double frenulum in the female; the female genitalia of the members of those genera show usually highly specialized ostium pouch which is free and removed beyond the eighth sternite. Male genitalia have broad and large vinculum the ventral margin of which is proportionately long and does not allow one to spread out the genitalia in a preparation. The main characters of the genera *Chilo* ZCK. and *Diatraea* GUILD. are given above. The male genitalia of these genera have the vinculum proportionately very narrow.

Summarizing the above data, we see that common features which appear in both *Calamotropha* ZELL. and *Crambus* F. s. str. and allies are similar venation of the wings and large and broad vinculum in the male genitalia. On the other hand there are rather greater differences between the two groups, in the absence of ocelli and the presence of the triple frenulum in the female in the former and the presence of ocelli and simple or double frenulum in the female in the latter. Also, the armature of the female genitalia in the two groups is very different from each other as the species of *Calamotropha* ZELL. show the female genitalia *Chilo*-like.

We see that, on the one hand, the members of the genus *Calamotropha* ZELL. show rather primitive features such as the armature of the female genitalia and frenulum of the female, and, on the other hand, they have progressive characters, as the vein  $r_5$  in the forewing stalked with  $r_3$  and  $r_4$ , the absence of the ocelli and the armature of the male genitalia. This points to the widely separate position of the genus *Calamotropha* ZELL. which, in my opinion requires its exclusion from the generic group *Crambus* F. One can judge that the genus *Calamotropha* ZELL. is not monophyletic with the genus *Crambus* F. s. str. and allies and the similar venation of the wings and armature of the male genitalia that appears in the two groups are only convergent features. It is very doubtful that the genus *Crambus* F. and allies have derivated from *Calamotropha* ZELL. In such a case we would have to suppose the repeated development of the ocelli in the genus *Crambus* F. and allies. On the other hand, if we take into consideration a contrary supposition, the primitive type of the female genitalia would have disappeared from the genus *Crambus* F. and be a secondary development in the genus *Calamotropha* ZELL. Both above mentioned suppositions are at least very doubtful.

Further, the study on the chaetotaxy of the caterpillars of *Crambidae* made by Dr. I. HASENFUSS of Erlangen (1960: 157) has indicated that *Calamotropha paludella* (HBN.) is a very distinct species and rather remote from the other

species of the generic group *Crambus* F., being rather similar to *Chilo* ZCK. In addition, the biology of the mentioned species is much as that of *Chilo* ZCK. and allied genera and differs diametrically from that of such genera as *Crambus* F. and allies. The caterpillars of the latter feed on moss, or among the roots of *Graminae*, whilst the caterpillars of the species of the genus *Calamotropha* ZELL. feed inside the stems and the pupae are to be found in the stems of the hostplant, similar to the pupae of the species of the genera *Chilo* ZCK. and *Diatraea* GUILD. The pupae of the species of the genus *Crambus* F. and allies are to be found underground in slight cocoons among the roots of the hostplant. One can judge that the change of the mode of feeding of the caterpillars from endophagous to exophagous was due to the change of the armature of the ovipositor of the imagines.

#### EXTERNAL ANATOMY

The members of the genus *Calamotropha* ZELL. are characterized as follows: Ocelli in most instances totally atrophied. However, several species have the ocelli slightly visible, moderately developed, or, even fully developed. *Calamotropha argyrostola* (HMPS.) has the ocelli moderately developed, however, they are concolorous with the adjacent area of the head and not very dark as in the species which have the ocelli fully developed. The species of the group *C. latella* (SNELL.) show ocelli fully developed and dark. However, this group is rather atypical for the genus under consideration and perhaps requires to be placed in a separate genus. The species of group *C. latella* (SNELL.) show also coincidence of the vein  $r_1$  with  $sc$  in the forewing which is atypical for *Calamotropha* ZELL. Besides they have rather triangular forewings, a feature rather rarely met with in the genus *Calamotropha* ZELL. However, there are intergrade species between *C. latella* (SNELL.) on the one hand and typical members of the genus *Calamotropha* ZELL. on the other hand. These are *C. melanosticta* (HMPS.), or *C. brevistrigella* (CAR.), which have ocelli totally or partly atrophied, however, in the shape and maculation of the forewing it resembles that in the *C. latella* (SNELL.) and allies.

Labial palpi in most instances rather slightly curved ventrad, extending for two to four times the length of the diameter of the eye. They are, as a rule, markedly whitened inwardly. Maxillary palpi rather similar to those in the species of the genus *Crambus* F. and allies, triangularly dilated by scales; the terminal half usually decidedly paler than the basal half.

Proboscium usually rather poorly developed, or even strongly atrophied.

Chaetoseme moderately developed, as in the species of the genus *Crambus* F., or *Chilo* ZCK. The face in most species broadly rounded, not, or barely, protruding forwards beyond the eye. However, in a few instances the face is rather distinctly produced forward and in *C. stachi* sp. n. it is strongly conical with a corneous point. Vertex usually concolorous with the face, clothed with

rather erect scales. Patagia in most species more or less lightened centrally. Thorax and tegulae usually concolorous with the ground colour of the forewing. Abdomen in most instances uniformly coloured, however, in *C. tripartita* (HMPS.) it shows a contrasted series of dark spots on the orange ground.

Frenulum of the male simple, of the female in most instances triple. However, several species show the frenulum of the female double, e. g. *C. fulvifusalis* (HMPS.), *C. danutae* sp. n., *C. argenticilia* (HMPS.), or *C. melanosticta* (HMPS.). The simple frenulum of the female has not as yet been found in any species of the genus under consideration. Venation of the wings similar to that in the species of the genus *Crambus* F. and allies.  $R_1$  in the forewing in most instances runs freely, however, in some species, as in *C. latella* (SNELL.) and allies, it is coincident with *sc*. Forewing in most species rather slightly expanding posteriorly, fairly similar in shape to that in the species of the genus *Chilo* ZCK. However, in some species, as in the *C. latella* (SNELL.) and allies, or *C. melanosticta* (HMPS.) and *C. brevistrigella* (CAR.), the forewing is rather triangular. The colour of the forewing is in most instances somewhat similar to that in the representatives of the genus *Chilo* ZCK.; it is yellowish, brownish, or grayish-brown with rather poorly defined pattern. Several species, as *C. latella* (SNELL.) and allies, *C. melanosticta* (HMPS.), *C. argenticilia* (HMPS.), *C. purella* (LEECH.), *C. azumai* BLESZ. and *C. argyrostola* (HMPS.) have the forewing pure white with more or less developed markings. The pattern of the forewing in most species consists of the discal dot, narrow subterminal fascia and a row of dark terminal dots. The subterminal fascia in most species a narrow dark line broadly excurved below the costa, with a more or less well indicated indentation above the dorsum. Terminal dots lacking only in a few species. There are species with the discal dot absent and the medial dot present, these are *C. latella* (SNELL.) and allies, *C. melanosticta* (HMPS.), or *C. brevistrigella* (CAR.). Some species show the discal dot and medial dot, both present. Medial fascia, if present, rather poorly developed. A few species of the *C. latella* (SNELL.) group show a yellow patch at the termen above the tornus. Few species have additional costal markings, as short streaks concolorous to the subterminal fascia, or a spot situated in the apical area. As an example may be given *C. oculalis* (SNELL.). *C. tripartita* (HMPS.) and *C. neurigrammalis* (HMPS.) have white longitudinal stripes in the forewing. Hindwing usually unicolorous, in some instances, however, a slight shade in the outer area is present. Under surface of both fore-and hindwing decidedly more glossy than the upper surface; in some instances slight traces of the markings of the upperside are also indicated on the underside.

Male genitalia. Uncus in most instances very long and slender, more or less curved ventrad, pointed apically. Most species have several very long hairs situated at the base of uncus. Sometimes these hairs are situated on two small projections near base of uncus. Several species show the hairs of the uncus similar to those in the species of the genus *Crambus* F. and allies. In such cases the hairs are dispersed over nearly the whole length of the uncus.

Such species are: *C. dielota* MEYR., *C. oculalis* (SNELL.), *C. alcesta* sp. n., or *C. argyrostola* (HMPS.). *C. oculalis* (SNELL.) and *C. argyrostola* (HMPS.) show some further atypical characters of *Calamotropha* ZELL., as the presence of the ocelli in the two and rather atypical costal markings in the former. On the other hand, *C. dielota* MEYR. and *C. alcesta* sp. n. besides the atypical hair of the uncus, have a complex of characters that is very typical of *Calamotropha* ZELL. A few species, e. g. *C. lupata* (MEYR.) or *C. atkinsoni* ZELL. have the uncus very short and proportionately broad. Uncus of *C. bradleyi* BŁESZ. is markedly bifurcate. Gnathos in most instances equal to length of uncus, long and slender, usually somewhat swollen and rounded terminally. Tegumen in general rather similar to that in the species of the genus *Crambus* F. and allies; the ventral part in some instances hairy. Valva in most cases undivided; a distinct pars basalis present only in *C. bradleyi* BŁESZ. and *C. satleri* sp. n. Costa usually well sclerotized, lacks hair. Cucullus does not differ in sclerotization from the remainder of the valva, which is usually heavily sclerotized over its total surface. Frequently various differentiations of the apical portion of the valva (e. g. process, a spine) are observed. Sacculus not differentiated. The inner surface of the valva (membrana valvae interna) in some instances clothed with rather short stout hairs or bristles; in several species it extends further cephalad than the membrana valvae externa; in some instances a deep notch of membrana valvae interna is observed [e. g. *C. martini* sp. n., or *C. obliterans* (WALK.)]. Pseudosaccus always well developed. I term as the pseudosaccus a heavily sclerotized pouch extending cephalad from the ventral-proximal angle of the valvae. However, some authors term this pouch as saccus. The true saccus is a pouch-shaped terminal portion of the vinculum that appear in only very primitive species of *Crambidae*. In any case the homology of some parts or the male genital armatures of the *Lepidoptera* are not yet quite clarified. Aedeagus usually about as long as the total armature, in some instances terminated by a spine. Vesica often armed with a single or several cornuti, in many instances scobinate towards the apex.

Female genitalia. Labia proportionately very broad with posterior apophyses long. The latter usually more or less dilated from midway from apices. The base of labia with a more or less broad, heavily sclerotized strengthenings. The dilatation of the posterior apophyses and the armature of the strengthenings of the labia are usually of specific significance. Genital plate in most instances broad with long anterior apophyses. The latter situated about midway from dorsal margin of the plate to ostium pouch. However, a few species show the anterior apophyses situated rather near the ostium pouch which is an atypical character for the species of the genus *Calamotropha* ZELL. The caudal heavily sclerotized portion of the ductus bursae is termed „ostium pouch“. It is more or less strongly coalescent with the genital plate, however, in some instances, the two are linked to each other by a short, heavily sclerotized bridge. Ostium pouch in most instances rather slightly specialized.

Only a few species have the ostium pouch lightly sclerotized, e. g. *C. famuella* (WALK.). Ductus bursae in most cases rather long, lightly sclerotized throughout. Bursa copulatrix ovate or elongate, often minutely scobinate. *C. paludella* (HBN.), *C. purella* (LEECH), *C. fulvifusalis* (HMPS.) and *C. azumai* BŁESZ. have a sheet-like signum on the bursa copulatrix. In the remainder of the species of the genus under consideration the signum is lacking. The above characteristics evidently shows that among the members of the genus *Calamotropha* ZELL. are several atypical species which have fully developed ocelli, double frenulum of the female,  $r_1$  coincident with *sc* in the forewing, additional markings on the costa of the forewing, rather short hairs dispersed over whole of uncus in the male genitalia, or anterior apophyses of the female genitalia close to the ostium pouch. However, no species having all the above atypical characters has as yet been observed. The species having one or more such features show the other characters very typical of the genus. Therefore, in spite of those atypical features, these species are considered by the writer as belonging to the genus under consideration. Of course, one can judge that separate genera should be erected for atypical species of *Calamotropha* ZELL. However, in such a case we should divide the genus into very many small genera that would be very unpractical and, most probably, of a rather doubtful scientific significance. As is mentioned above, intermediate species between the typical and atypical species are observed. Perhaps some species as *C. latella* (SNELL.) and allies, *C. oculalis* (SNELL.) and allies, or *C. argyrostola* (HMPS.) require to be placed in separate genera. However, our knowledge of tropical *Crambidae* is as yet very poor and only the aquisition of much more material might solve some problems regarding the generic placement of several species. In fact, most species considered in this paper are known only from one or two specimens. The number of species newly described in relation to the known species is rather considerable. In all this, I believe, is a rather small percentage in relation to the living species. The Ethiopian Region especially is very little known with regard to the genus *Calamotropha* ZELL.

#### ZOOGEOGRAPHY

As is mentioned above, very many species of the genus *Calamotropha* ZELL. are known only from unique or few examples. So, our knowledge of the geographical distribution of most of species is rather insufficient to allow us to reach any important conclusions regarding the derivation and zoogeography of the group in question.

The accepted zoogeographical regions of the world are six, namely the Nearctic, Palaearctic, Ethiopian, Australian, Oriental and Neotropical.

In Table I the species occurring in each of regions of the world is shown. I list below the number of species found in one or more regions of the world

Species found in all regions	0
,,    ,,    five regions	0
,,    ,,    in four regions	1
,,    ,,    ,,    three regions	0
,,    ,,    ,,    two regions	5
,,    ,,    ,,    one region	75
Total	81

As can see above none of the known 81 species of the genus *Calamotropha* ZELL. has a worldwide distribution. Only one species, namely *C. paludella* (HBN.) is found in four regions, namely in Palearctic, Ethiopian, Australian and Oriental Region. The number of species found in two regions is very small. As far I know no species of the genus has been found in the New World.

A table is given below for the species found in each region.

TABLE I

Palaearctic Region

1. *Calamotropha aureliella* (F. R.) — Europa, East Sibiria, Japan
2. *Calamotropha fulvifusalis* (HMPS.) — Amur, Japan
3. *Calamotropha azumai* BLESZ. — Japan
4. *Calamotropha yamanakai* INOUE — Japan
5. *Calamotropha brevilinella* (SOUTH) — China
6. *Calamotropha josettae* sp. n. — China
7. *Calamotropha nigripunctella* (LEECH) — China, Japan
8. *Calamotropha brevistrigella* (CAR.) — China, Japan
9. *Calamotropha okanoi* sp. n. — China, Manchuria, Japan
10. *Calamotropha shichito* (MARUMO) — Corea, Japan
11. *Calamotropha fuscilineatella* (LUCAS) — Morocco
12. *Calamotropha hierichuntica* ZELL. — Palestine, Syria
13. [ *Calamotropha paludella* (HBN.) — Europe, Middle East, Near East, ? Japan]
14. [ *Calamotropha purella* (LEECH) — Amur, China, Japan]

Oriental Region

1. *Calamotropha paludella* (HBN.) — India
2. *Calamotropha purella* (LEECH) — Lesser Sunda, Formosa
3. *Calamotropha oblitterans* (WALK.) — Borneo, Palawan
4. *Calamotropha formosella* sp. n. — Formosa
5. *Calamotropha subterminella* (WIL. & SOUTH) — Formosa
6. *Calamotropha albistrigella* (HMPS.) — Bonin Isl.
7. *Calamotropha boninella* (SHIBUYA) — Bonin Isl.
8. *Calamotropha famulella* (WALK.) — Ceylon, Tonkin
9. *Calamotropha melanosticta* (HMPS.) — India, Ceylon
10. *Calamotropha argenticilia* (HMPS.) — India, Ceylon
11. *Calamotropha punctivenella* (HMPS.) — India, Ceylon, Tonkin
12. *Calamotropha tonsalis* (WALK.) — Borneo
13. *Calamotropha atkinsoni* ZELL. — India, Ceylon, Borneo, Siam, Celebes, Philippines
14. *Calamotropha lupata* (MEYR.) — India

15. *Calamotropha corticella* (HMPS.) — India
16. *Calamotropha saturnella* sp. n. — India
17. *Calamotropha alcesta* sp. n. — India
18. *Calamotropha subalcesta* sp. n. — Formosa
19. *Calamotropha sumatraella* sp. n. — Sumatra
20. *Calamotropha pseudodielota* sp. n. — Ceylon
21. *Calamotropha arachnophaga* (STRAND) — Formosa
22. *Calamotropha subfamulella* (CAR. & MEYR.)
23. *Calamotropha unicolorella* (ZELL.) — Ceylon, India, Borneo, Philippines
24. *Calamotropha venera* sp. n. — India
25. *Calamotropha schwarzi* sp. n. — Ceylon
26. *Calamotropha endopolia* (HMPS.) — Ceylon
27. *Calamotropha javaica* sp. n. — Jawa
28. *Calamotropha franki* (CAR.) — China
29. *Calamotropha neurigrammalis* (HMPS.) — Ceylon
30. *Calamotropha oculalis* (SNELL.) — Java, Philippines
31. *Calamotropha indica* sp. n. — Ceylon, India
32. *Calamotropha melli* (CAR. & MEYR.) — China
33. *Calamotropha latella* (SNELL.) — India
34. *Calamotropha sattleri* sp. n. — Formosa
35. *Calamotropha sienkiewiczi* sp. n. — China
36. [ *Calamotropha nigripunctella* (LEECH) — China]
37. [ *Calamotropha brevistrigella* (CAR.) — China]

#### Australian Region

1. *Calamotropha delatalis* (WALK.) — Australia
2. *Calamotropha leptogrammella* (MEYR.) — Australia, Tasmania
3. *Calamotropha dielota* MEYR. — Australia, Fiji, Ceram, Admiralty Isl., New Guinea
4. [ *Calamotropha atkinsoni* ZELL. — Celebes]
5. [ *Calamotropha paludella* (HBN.) — Australia]

#### Ethiopian Region

1. *Calamotropha anticella* (WALK.) — Natal
2. *Calamotropha janusella* sp. n. — Abyssinia
3. *Calamotropha diakonoffi* sp. n. — Natal
4. *Calamotropha torpidella* (ZELL.) — Africa, loc.?
5. *Calamotropha abjectella* SNELL. — Lower Guinea
6. *Calamotropha lattini* sp. n. — Nyassaland
7. *Calamotropha martini* sp. n. — Uganda
8. *Calamotropha fuscivittalis* (HMPS.) — Rhodesia
9. *Calamotropha bradleyi* BŁESZ. — Cape Colony
10. *Calamotropha stachi* sp. n. — South Africa
11. *Calamotropha niveicostella* (HMPS.) — Natal, British East Africa
12. *Calamotropha xanthypa* sp. n. — Natal
13. *Calamotropha danutae* sp. n. — Nyasaland
14. *Calamotropha cleopatra* sp. n. — British East Africa
15. *Calamotropha robustella* SNELL. — Lower Guinea
16. *Calamotropha mimosae* sp. n. — Congo
17. *Calamotropha athenae* sp. n. — Central-Eastern and Central-Western Africa
18. *Calamotropha heliocausta* (WALL.) — Transvaal
19. *Calamotropha psaltrias* (MEYR.) — Congo
20. *Calamotropha wallengreni* sp. n. — Zululand

21. *Calamotropha agryppina* sp. n. — Nyasaland
22. *Calamotropha joskeaelia* sp. n. — Tanganyika-Territory
23. *Calamotropha bicornutella* sp. n. — Angola
24. *Calamotropha diodonta* (HMPS.) — Nigeria
25. *Calamotropha kuchleinii* sp. n. — Tanganyika-Territory
26. *Calamotropha subdiodonta* sp. n. — Gabon
27. *Calamotropha schönnmanni* sp. n. — Tanganyika-Territory
28. *Calamotropha tripartita* (HMPS.) — Natal
29. *Calamotropha argyrostola* (HMPS.) — Natal
30. *Calamotropha megalopunctata* sp. n. — Sudan
31. *Calamotropha argenteociliella* PAG. — East Africa
32. [*Calamotropha paludella* (HBN.) — Rhodesia, Madagascar]

The species given in brackets are present in the individual region but actually indigenous to other region. As can see from the above list, the Ethiopian and Oriental Region are the richest in the species of the genus under consideration. The number of species indigenous to the Palaearctic and Australian Region is rather few, and there are no species of *Calamotropha* ZELL. found in the New World.

It is rather difficult to decide whether the Ethiopian or the Oriental Region was the centre of distribution of the species of *Calamotropha* ZELL. Both the Ethiopian and Oriental Region includes species highly specialized. The number of such species is rather in regard to the Ethiopian Region than to the Oriental Region, however, the differences are not very great, and some change in the above relations may be expected after further thorough study of more material.

It is also very difficult to say anything about the period in which the group in question originated. A rather high specialization of the group, as well as its distribution points to a rather old age for the group, perhaps early tertiary. Very high differentiation of the Ethiopian and Oriental species points to the greatest migrations of the species have taken place during the early tertiary connection of the African and Euroasiatic Continent. However, on the other hand some species of the two regions are rather little differentiated from each other, e. g. *Calamotropha dielota* MEYR., *C. anticella* (WALK.), *C. janusella* sp. n. and allies. So one can judge that some migrations would have taken place more recently.

Very interesting is the absence of *Calamotropha* ZELL. from New Zealand. So one can judge that in Eocene times (supposed time of the break of New Zealand from Australian Continent) *Calamotropha* ZELL. was absent from Australia.

It is rather difficult to say why *Calamotropha* ZELL. did not pass across the Bering Strait to America.

The number of Palaearctic species of *Calamotropha* ZELL. is rather small. In Europe occur only two species, namely *C. paludella* (HBN.) and *C. aureliella* (F. R.). The former is supposed by the writer to be indigenous to the Oriental Region and the latter to the eastern part of the Palaearctic Region.

In the Mediterranean Subregion occur two species, namely *C. fuscilineatella* (LUCAS) and *C. hierichuntica* ZELL. — *C. aureliella* (F. R.) shows very disjunctive distribution, as it is reported from Hungary, Roumania and from Eastern Sibiria and Japan. I believe, however, that further investigations of the Palaearctic fauna will bring some further data on the distribution of this species in Central Asia. *C. paludella* (HBN.) is very common in Europe and the Near East. As far I know, this species has not as yet been observed in North Africa. The data on the occurrence of *C. paludella* (HBN.) are in need of verification. — The species common to the Asiatic Continent and Japan are *C. fulvifusalis* (HMPS.), *C. okanoi* sp. n. *C. nigripunctella* (LEECH) and *C. brevistrigella* (CAR.). Other species are only Japanese endemics, as *C. azumai* BŁESZ. or *C. yamanakai* INOUE, or known only from China, e. g. *C. brevilinella* (SOUTH) and *C. franki* (CAR.). *C. purella* (LEECH) is rather widely distributed over Manchuria, Amur and Japan, however, this species is considered by the writer as indigenous to the Oriental Region. The Oriental *C. melanosticta* (HMPS.) is known from the Palaearctic Region from a single specimen found in Kulu. One can see that most of the Palaearctic species of *Calamotropha* ZELL. are strictly confined to the South-Eastern areas of the Palaearctic Region and most probably are derivatives from the species radiating from the Oriental Region. The latter, similar to the Ethiopian Region, is very rich in species of the genus in question. The ranges of Oriental species are very diverse. So, we may note species rather widely distributed, as *C. atkinsoni* ZELL., *C. punctivenella* (HMPS.), or *C. unicolorella* ZELL. The latter is known from specimens coming from India, Ceylon, Borneo and the Philippines. *C. atkinsoni* ZELL. ranges from Ceylon to Siam and Borneo. However, the form from Borneo is a distinct geographical race. There are species found only in Ceylon, as *C. endopolia* (HMPS.), *C. schwarzi* sp. n., or *C. neuriogrammatis* (HMPS.). Other species occur in India, but are absent from Ceylon, e. g. *C. alcesta* sp. n., *C. saturnella* sp. n. and others. The species common to Ceylon and India are *C. indica* sp. n., or *C. melanosticta* (HMPS.). *C. paludella* (HBN.) and *C. purella* (LEECH) are considered by the writer as indigenous to the Oriental Region. The former is known from Punjab and the latter from Lesser Sunda and Formosa. Of the species occurring on Malaya we may note *C. tonsalis* (WALK.) and *C. oblitterans* (WALK.) The latter is found also in Palawan. The Palaearctic *C. okanoi* sp. n. is undoubtedly a derivative of *C. oblitterans* (WALK.). The two are almost indistinguishable on facies, but very distinct on the genitalia of either sex. *C. sumatraella* sp. n. and *C. pseudodielota* sp. n. are apparently the derivatives of the Australian *C. dielota* MEYR. From Formosa we know only four indigenous species, namely *C. subterminella* (WIL. & SOUTH.), *C. formosella* sp. n. *C. arachnophaga* (STRAND) and *C. sattleri* sp. n. One can see that there is rather small number of species indigenous to the continental islands of Asia. The fauna of these islands resembles rather that of Continental Asia, as similarly in regard to other groups of animals. The Australian species are few. They appear in the Northern and Eastern parts of that Continent. *C. paludella*

*della* (HBN.) common at Sydney, is most probably introduced by man. — The Ethiopian species of the genus *Calamotropha* ZELL. are in most instances distributed in Central Africa. The number of species occurring in the very south of Africa is rather small [e. g. *C. bradleyi* BŁESZ., *C. argyrostola* (HMPS.), *C. anticella* (WALK.) and some others]. There are no records concerning the occurrence of any species of *Calamotropha* ZELL. in the Southern Sahara. Only one species is found in Madagascar, viz. *C. paludella* (HBN.). This species is found also in continental Africa. *C. paludella* (HBN.) has the widest distribution among the members of the genus under consideration. In spite of such a wide distribution, *C. paludella* (HBN.) does not show any distinct geographical race. This points to the artificial distribution of *C. paludella* (HBN.), most probably as pupae in the stems of *Typha latifolia* L. I do not discuss the distribution of each species that occurs in Africa, as most of species are known only from one or few examples. For this reason our knowledge of the fauna of *Calamotropha* ZELL. in the Ethiopian Region is still very poor and is in need of further thorough investigation.

## SYSTEMATIC PART

### Genus: *Calamotropha* ZELLER

- 1824. *Tinea*, HÜBNER, Samml. Eur. Schmett. (in part).
- 1835. *Chilo*, TREITSCHKE, Schmett. Eur. **10** (3): 165 (in part).
- 1836. *Crambus*, DUPONCHEL, Hist. Nat. Lép. Fr. **10**: 314 (in part).
- 1845. *Crambus*, GUENÉE, Ann. Soc. ent. Fr. (2) **3**: 325 (in part).
- 1846. *Chilo*, DUPONCHEL, Cat. Méth. Lép. Eur. p. 313 (in part).
- 1849. *Crambus*, HERRICH-SCHÄFFER, Syst. Bearb. Schmett. Eur. **4**: 52 (in part).
- 1863. *Crambus*, WALKER, List Spec. Lep. **27**: 145 (in part.).
- 1863. *Myzea* WALKER, List. Spec. Lep. **27**: 190 (gen. n.).
- 1863. *Chilo*, ZELLER, Chil. Cramb. Gen. Spec. p. 6 (in part.).
- 1863. *Calamotropha* ZELLER, Chil. Cramb. Gen. Spec. p. 8 (gen. n.).
- 1865. *Calamotropha*, HEINEMANN, Schmett. Deutschl. **1** (2): 115.
- 1871. *Calamotropha*, STAUDINGER & WOCKE, Cat. **2**: 217.
- 1879. *Chilo*, MEYRICK, Proc. Linn. Soc. N. S. W. **3**: 178 (in part.).
- 1882. *Calamotropha*, SNELLEN, Vlind. Ned. **1**: 88.
- 1895. *Calamotropha*, MEYRICK, Handbook Brit. Lep. p. 387.
- 1896. *Crambus*, HAMPSON, Proc. Zool. Soc. Lond. **1895**: 925 (in part.).
- 1896. *Chilo*, HAMPSON, Proc. Zool. Soc. Lond. **1895**: 954 (in part.).
- 1901. *Crambus*, STAUDINGER & REBEL, Cat. **2**: 2 (in part.).
- 1910. *Crambus*, SPULER, Schmett. Eur. **2**: 191 (in part.).
- 1919. *Conocrambus* HAMPSON, Ann. Mag. Nat. Hist. (9) **3**: 443 (gen. n.) (in part.).
- 1928. *Crambus*, MEYRICK, Rev. Handbook Brit. Lep. p. 402 (in part.).
- 1935. *Calamotropha*, LHOMME, Cat. Lép. Fr. & Belg. **2**: 577.
- 1957. *Calamotropha*, BŁESZYŃSKI, Acta Zool. Crac. **1**: 458.

***Calamotropha paludella* (HÜBNER)**

[Pl. XX, Fig. 1—4, Pl. XLIV, Fig. 97—99, Pl. LVII, Fig. 158]

1824. [*Tinea*] *paludella* HÜBNER, Samml. Eur. Schmett. pl. 68, f. 452 ♂, f. 453 ♀ (sp. n.).  
 1835. *Chilo paludellus*, TREITSCHKE, Schmett. Eur. **10** (3): 164.  
 1845. *Chilo paludellus*, DUPONCHEL, Hist. Nat. Lép. Fr. **10**: 268, pl. 283, f. 2.  
 1845. *Crambus paludellus*, GUENÉE, Ann. Soc. ent. Fr. (2) **3**: 330.  
 1846. *Chilo paludellus*, DUPONCHEL, Cat. Méth. Lép. Eur. p. 313.  
 1849. *Crambus paludellus*, HERRICH-SCHÄFFER, Syst. Bearb. Schmett. Eur. **4**: 117.  
 1856. *Chilo obtusellus* STANTON, Ent. Ann. **1856**: 33, frontispiece f. 5 (sp. n.).  
 1863. *Crambus paludellus*, WALKER, List. Spec. Lep. **27**: 152.  
 1863. *Calamotropha paludella*, ZELLER, Chil. Cramb. Gen. Spec. p. 9.  
 1865. *Calamotropha paludellus*, HEINEMANN, Schmett. Deutschl. 2 Abt., **1** (2): 116.  
 1871. *Calamotropha paludella*, STAUDINGER & WOCKE, Cat. **2**: 217.  
 1878. *Chilo paramattellus* MEYRICK, Proc. Linn. Soc. N. S. W. **3**: 178 (sp. n.). **Syn. n.**  
 1879. *Chilo paramattellus* MEYRICK, Proc. Linn. Soc. N. S. W. **4**: 206.  
 1882. *Calamotropha paludella*, SNELLEN, Vlind. Ned. **1**: 89.  
 1886. *Calamotropha paludella*, LEECH, Brit. Pyr. p. 72, pl. VII, f. 4.  
 1887. *Diatraea paramattella* MEYRICK, Tr. Ent. Soc. Lond. **1887**: 248.  
 1887. *Calamotropha Paludella*, ROMANOFF, Mém. Lép. **3**: 44.  
 1896. *Crambus paludellus*, HAMPSON, Proc. Zool. Soc. Lond. **1895**: 926.  
 1896. *Chilo paramattellus*, HAMPSON, Proc. Zool. Soc. Lond. **1895**: 958.  
 1898. *Crambus earpherus* HAMPSON, Ann. Mag. Nat. Hist. (7) **1**: 159 (sp. n.). **Syn. n.**  
 1901. *Crambus paludellus*, STAUDINGER & REBEL, Cat. **2**: 2.  
 1904. *Crambus paramattellus*, TURNER, Proc. Roy. Soc. Qd. **18**: 163.  
 1910. *Crambus paludellus*, SPULER, Schmett. Eur. **2**: 191, pl. 81, f. 26; Nachtr. pl. 9, f. 29 (larva).  
 1914. *Crambus paludellus* ab. *nivellus* REBEL (in ROTHSCHILD), Rovart. Pap. **21**: 49 (ab. n.).  
 1919. *Conocrambus calamosus* HAMPSON, Ann. Mag. Nat. Hist. (9) **3**: 443 (sp. n.). **Syn. n.**  
 1925. *Crambus paludellus*, PETERSEN, Verh. III Int. Ent. Kongress, f. 1 (♂ genit.).  
 1931. *Crambus paludellus* ab. *durandi* LUCAS, Bull. Soc. ent. Fr. **1931**: 95 (ab. n.).  
 1932. *Crambus typhivorus* MEYRICK, Exot. Micr. **4**: 344 (sp. n.). **Syn. n.**  
 1933. *Crambus paludellus*, STERNECK & ZIMMERMANN, Prodr. Schmett. Boehm. p. 13.  
 1935. *Calamotropha paludella*, LHOMME, Cat. Lép. Fr. Belg. **2**: 577.  
 1937. *Crambus paludellus* ab. *digitatus* OSTHEIDER, Dtsch. ent. Zeit. „Iris“ **51**: 101 (ab. n.).  
 1938. *Crambus paludellus*, PIERCE & METCALFE, Gen. Brit. Pyr. p. 20, pl. XII (♂ & ♀ genit.).  
 1943. *Crambus paludellus*, MARIANI, Giorn. Sc. Nat. Ec. **42**: 122.  
 1945. *Crambus paludellus*, KLOET & HINCKS, Check List. Brit. Ins. p. 114.  
 1951. *Crambus* (*Calamotropha*) *paludellus*, BŁESZYŃSKI, Pol. Pis. Ent. **21**: 74, pl. IV, f. 5 (♂ genit.); pl. XXVII, f. 51 (♀ genit.).  
 1956. *Crambus paludellus*, BŁESZYŃSKI, Klucze do oznaczania owadów Polski, Cz. XXVII, Z. 45b, p. 4, 7, 30, 31, 46, 48, 63 (key); f. 66; f. 130 & 131 (♂ genit.); f. 215 (♀ genit.).  
 1957. *Calamotropha paludella*, BŁESZYŃSKI, Acta Zool. Crac. **1**: 459, pl. XLVII, f. 5; pl. LVIII, f. 6 (♂ genit.); pl. XCI, f. 6 (♀ genit.).  
 1957. *Calamotropha paludella* ab. *durandi*, BŁESZYŃSKI, Acta Zool. Crac. **1**: 460.  
 1959. *Calamotropha paludella* ssp. *afghanistanica* BŁESZYŃSKI, Beitr. naturkundl. Forsch. Südwestdeutschl. **18**: 114, pl. III, f. 5 (ssp. n.). **Syn. n.**  
 1960. *Calamotropha paludellus*, HASENFUSS, Abh. Larvalsyst. Ins. **5**: 157, fig. 168 (larva).

Ocelli completely atrophied. Antennae uniformly pale brown-yellowish, in some instances, however, with slightly visible yellowish and brownish rings;

of a basic *Calamotropha*-shape. Labial palpi more than twice the length of the diameter of the eye; whitish to brown-yellow or brown. Maxillary palpi concolorous. Face rather decidedly produced forward, more or less conical, rounded; in some instances rather slightly produced; concolorous with the palpi. Vertex, patagia, thorax and tegulae concolorous.  $R_1$  in the forewing free. Frenulum of the female triple. Length of forewing 6,5 to 16 mm., maximal width 3,3 to 6 mm. Costa barely arched or nearly straight; apex rather acute; termen nearly vertical to costa, straight or barely arched. Ground colour very variable, dirty whitish-greyish, yellowish, ochreous-yellow, ochreous-brown or brown. The pattern totally reduced, vestigial or, in some instances, rather well defined. It consists of a dark discal dot and a subterminal fascia formed of a row dark specks. Terminal dots absent. Fringes dull or slightly glossy, concolorous with the ground colour, or somewhat darker. Hindwing snow-white, shaded on margins; glossy. Fringes concolorous with the ground. Under surface unicolorous glossy, forewing pale yellowish, hindwing white.

*C. paludella* ad. *nivella* (REBEL) was described from several male and female specimens from Kupinovo, Slavonia. Forewing rather glossy white with pattern distinct brown. Antenna with moderately visible brown and whitish rings. Palpi and face rather whitened. Similar white form was described by LUCAS as *C. paludella* ab. *durandi* (LUCAS). Described from Vendée, France.

*C. paludella* ab. *digitata* (OSTHELDER). I give the original description of this aberration: „Die äussere Fleckreihe der Vfl. nach innen zu schwarzen Strichen ausgezogen, von denen die unter der Medianader liegenden sich bei extremen Stücken unterhalb des Mittelfleckes zu einem bis an die äussere Begrenzung des Wurzelfeldes reichenden Striche vereinigen“. Described from two females from Hungarian Puszta.

#### Male genitalia

Uncus twice length of gnathos, slender, straight with terminal portion dagger-shaped, sharply pointed. Gnathos decidedly tapering, tip rather pointed. Tegumen normal. Valva undivided, costa at base markedly thickened. Anal-costal angle triangularly marked, more heavily sclerotized than the adjacent areas. Apex rather obliquely truncate. Ventral margin nearly straight not differentiated. Pseudosaccus abnormally large. Vinculum broad, tapering cephalad, rounded. Aedeagus markedly bent ventrad beyond the base, thence rather straight. A row of thin cornuti and minute scobinations present towards apex.

#### Female genitalia

Labia very broad with caudal margins rather straight. Genital plate with dorsal margin rather short, anterior apophyses broad triangles. Posterior apophyses markedly swollen midway from apices; basal thickenings of labia

present. Ostium pouch about as broad as the ductus at its source; heavily sclerotized. Ductus bursae rather short, lightly sclerotized throughout. Bursa copulatrix ovate or slightly elongate, in some instances gently wrinkled. A large, sheet-like, triangular signum with irregularly dentate margins present.

### Comments

This species is extremely widely spread over Africa, Madagascar, Europe, Western, and Southern Asia and Australia and shows considerable variability in its facies as well as in the armature of genitalia of both sexes; consequently it has been several times described. The typical *C. paludella* (HBN.) comes from Central Europe, however, the species is so variable, that I am quite unable to separate any distinct geographical subspecies. Perhaps *C. paludella* ab. *nivella* (REBEL) is a local race and not only an aberration, however, too little material is available for study. On the other hand I have some typical specimens of *C. paludella* (HBN.) from Central-Southern Europe from where the mentioned aberration was described. *C. paludella* ab. *nivella* (REBEL) resembles East-Asiatic *C. purella* (LEECH). However, the latter species has the pattern in the forewings ochreous-yellow, forewing is markedly glossy snow-white and the subterminal fascia is bordered on costa with an additional, distinct, concolorous streak lacking in the former. Perhaps *C. paludella* ab. *nivella* (REBEL) is a distinct species. This problem is extremely difficult to solve, as both *C. paludella* (HBN.) and *C. purella* (LEECH) have the genitalia strikingly similar to each other and, on the other hand, rather variable. Perhaps *C. purella* (LEECH) is only geographical subspecies of *C. paludella* (HBN.).

*Conocrambus calamosus* HMPS., was described from a unique female specimen taken in Lydenburg, Transvaal. The holotype agrees perfectly with typical *Calamotropha paludella* (HBN.) and I sink it under the synonyms of the latter. *Crambus carpherus* HMPS. was described from some male and female specimens coming from Pretoria, Transvaal. The holotype is a male. This species is also obviously conspecific with *Calamotropha paludella* (HBN.). The specimens of *C. paludella* (HBN.) coming from Africa and Madagascar show in some instances somewhat more yellow colour than those from Europe, India and Australia. — *C. paludella* ssp. *afghanistanica* BLESZ. recently described by the author from a long series of female specimens from Afghanistan should be also sunk under the synonyms of *C. paludella* (HBN.). — *Crambus typhivorus* MEYR. was described from four males from Punjab, India and should also be synonymized with the species under consideration. The specimens of the former are decidedly smaller than normal specimens of *C. paludella* (HBN.). I designate as the lectotype a male, GS-5625 (B. M.) BL. — *Chilo paramattellus* MEYR. from Australia included two species, as the males are typical *Calamotropha paludella* (HBN.) and the females were subsequently

described by MEYRICK as *Chilo leptogrammellus* MEYR. It is very surprising that MEYRICK quoted (1887: 248) his *Chilo paramattellus* MEYR. as belonging to the genus *Diatraea* GUILD. I designate as the lectotype of *Chilo paramattellus* MEYR. a male conspecific with *Calamotropha paludella* (HBN.) labelled: „Sydney. N. S. W. 16 II. [18]78“.

As mentioned above, the species under consideration shows a very wide range. HERING (1903: 84) and SHIBUYA (1928b: 139 & 140) cite *C. paludella* (HBN.) from Japan. This points that the range of *C. paludella* (HBN.) and closely related *C. purella* (LEECH) overlap. However, the above mentioned records need verification. The HERING record is an apparent misidentification of *C. purella* (LEECH). The SHIBUYA record was based partly on the recently described *C. aureliella* ssp. *kikuchii* OKANO [discussion see comments at *C. aureliella* (F. R.)]. — I have found a few examples of *C. paludella* (HBN.) among the material of the Rothschild Bequest at the British Museum (N. H.) in London, coming from Madagascar. However, such a wide distribution may, in part, be due to the activity of man in carrying the pupae in the stems of *Typha latifolia* L. The species in question is very common in each of its localities, which are near the water as a rule. The larva feeds in stems of *Typha latifolia* L. MEYRICK stated (1932: 344) that the specimens of his *Crambus typhivorus* MEYR. were bred from pupae in stems of *Typha latifolia* L.

#### Material examined

A long series of male and female specimens from Europe; lectotype and two lectotypoids of *Crambus typhivorus* MEYR., Punjab, lectotype GS-5625 (B. M.) Bl., coll. Brit. Mus. (N. H.); three males from Kashmir, 5000—6000 ft., 15. V. 1942, coll. H. G. Amsel; holotype and several typoids of *Calamotropha paludella* ssp. *afghanistanica* BLESZ., Afghanistan, coll. Landessammlung für Naturkunde, Karlsruhe; 12 males and females from Syria, author's coll.; holotype of *Conocrambus calamosus* HMPs., female; „Transvaal, Lydenburg“, coll. Brit. Mus. (N. H.); holotype and typoids of *Crambus carpherus* HMPs., holotype-male: „Pretoria (W. L. D.), Poc. 1894“, GS-5557 (B. M.) Bl., typoids from Pretoria; one female from Athi ya Mave, Brit. East Africa, all in coll. Brit. Mus. (N. H.); three males from Tananariva, Madagascar, coll. Brit. Mus. (N. H.) and author's coll.; lectotype and three lectotypoids of *Chilo paramattellus* MEYR. (males), Sydney, N. S. W., coll. Brit. Mus. (N. H.); several syntypes of *Crambus paludellus* ab. *nivellus* REBEL, Slavonia, coll. Brit. Mus. (N. H.) and coll. Nat.-hist. Mus., Vienna; holotype of *Crambus paludellus* ab. *durandi* LUKAS, coll. Mus. Hist. Nat., Paris.

#### *Calamotropha purella* (LEECH)

[Pl. XXI, Fig. 5—7, Pl. XLV, Fig. 101—104, Pl. LVII, Fig. 159, 160]

1889. *Crambus purellus* LEECH, Ent. 22: 108, pl. V, f. 7 (sp. n.).  
 1896. *Crambus purellus*, HAMPSON, Proc. Zool. Soc. Lond. 1895: 937.  
 1901. *Crambus purellus* LEECH, Tr. Ent. Soc. Lond. 1901: 394.  
 1903. *Calamotropha paludella*, HERING (nec HÜBNER), Stett. Ent. Zeit. 64: 84.  
 1905. *Crambus purellus*, MATSUMURA, Cat. Ins. Jap. p. 192.  
 1911. *Crambus purellus*, MATSUMURA, J. Coll. Agr. Tahoku Imp. Univ. 4 (1): 57.  
 1917. *Crambus flaviguttellus* WILEMAN & SOUTH, Ent. 50: 148 (sp. n.). *Syn. n.*

1919. *Crambus chionostola* HAMPSON, Ann. Mag. Nat. Hist. (9) 3: 290 (sp. n.). **Syn. n.**  
 1925. *Crambus purellus*, CARADJA, Mem. Sect. Științ. Acad. Rom. (3) 3: 297.  
 1927. *Crambus purellus* var. *aurifusalis* CARADJA, Mem. Sect. Științ. Acad. Rom (3) 4: 424 (var. n.).  
 1928. *Crambus flaviguttellus*, SHIBUYA, J. Fac. Agr. Hokkaido Imp. Univ. 22: 47.  
 1928. *Crambus angulatus* SHIBUYA, J. Fac. Agr. Hokkaido Imp. Univ. 21: 133, pl. II, f. 9 (sp. n.). **Syn. n.**  
 1932. *Crambus fulrifusalis*, CARADJA (nec HAMPSON), Bull. Sect. Scient. Acad. Roum. 15 (7/8): 7.  
 1935. *Crambus aurifusalis*, CARADJA & MEYRICK, Mat. Microlep. Fauna Chin. Prov. Kiangsu, Chekiand und Hunan, p. 23.  
 1938. *Crambus purellus* var. *atrofasalis* [sic], CARADJA, Dtsch. Ent. Zeit. „Iris“ 52: 91.  
 1959. *Calamotropha inouei* BŁĘSZYŃSKI, Tinea, Tokyo 5: 275, pl. XXXVI, f. 34 (♀ genit.) (sp. n.). **Syn. n.**  
 1959. *Calamotropha purella*, INOUE, Icon. Ins. Jap. 1: 234, pl. 163, f. 34.  
 1959. *Calamotropha purella* f. *angulata*, Okano, Tr. Lép. Soc. Jap. 10 (4): 51.

Ocelli totally atrophied. Antennae white, distinctly ringed with brown; shape similar as in the preceding species. Labial palpi similar in shape to those in *C. paludella* (HBN.), white. Maxillary palpi white. Face rather markedly produced forward, rounded, white. Vertex, patagia, thorax and tegulae white.  $R_1$  in forewing free. Frenulum of the female is triple. Length of forewing 8,5—12 mm., maximal width 3,4—4,3 mm. Costa nearly straight, apex fairly acute, termen nearly vertical to costa, straight. Ground colour glossy snow-white with pattern more or less well defined, sometimes nearly totally reduced; ochreous-yellow. Subterminal fascia usually considerably reduced, distinctly remote from termen; it is arched and nearly vertical above the dorsum; on the costa it is followed by an oblique, parallel, concolorous streak. Discal dot yellow, in some instances absent or poorly defined. Median fascia consisting of several patches of yellow scales, usually very poorly defined or totally reduced. No terminal dots present. Termen faintly bordered with darker below apex. Fringes glossy, concolorous with ground colour. Hindwing glossy snow-white with apical area finely shaded with greyish and termen narrowly edged with dark below apex. Under surface: Forewing glossy brownish; hindwing glossy white with termen rather distinctly bordered with darker.

***Calamotropha purella* ssp. *aurifusalis* CARADJA, comb. n.**

[Pl. XXI, Fig. 7]

Forewing uniformly glossy yellowish with no markings. A slightly separable subspecies analogical to *C. aureliella* ab. *korbi* (CAR.). Described from Tientsin, China. Distributed also in Mancharia.

**Male genitalia**

Generally rather strikingly similar to those in *C. paludella* (HBN.). A rather considerable variability is observed.

### Female genitalia

Practically indistinguishable from those in *C. paludella* (HBN.). Bursa copulatrix in some instances distinctly wrinkled. The size of genitalia very variable.

### Comments

In spite of a striking similarity of the genitalia in both sexes to the preceding species, *C. purella* (LEECH) seems to be a distinct species, as no intermediate specimens between the two have been observed. *C. paludella* (HBN.) has whitened forms which occur in Europe [ab. *nivella* (REBEL), ab. *durandi* (LUCAS)], but the pattern of these is greyish and never yellow as in the species under consideration. The LEECH types come from Hokodate, Japan. There is one example of each sex that bears a label „Type“ in the collection at the British Museum (N. H.) in London. The holotype has not been designated by LEECH. I designate as the lectotype the male labelled: „*Crambus purellus* Type“, „Hakodate. August. 1886 LEECH“, „LEECH Coll. 1900—64“, GS-5605 (B. M.) BL. — The holotype of *Crambus flaviguttellus* WIL. & SOUTH. is a male coming from Tainan, Formosa. This is strikingly similar to and apparently conspecific with the species under consideration. The only difference is that the face of *Crambus flaviguttellus* WIL. & SOUTH. is less produced forward than in the typical *Calamotropha purella* (LEECH). I do not consider that difference as of much importance, as some variability of the shape of the face in *C. purella* (LEECH) and *C. paludella* (HBN.) is observed. — The holotype of *Crambus chionostola* HMPS. is a female coming from Alor Is. (Lesser Sunda). This is also obviously conspecific with *C. purella* (LEECH) and I sink it under the synonyms of the latter. — OKANO (1959: 51) pointed out that *Crambus angulatus* SHIB. (described from Hokkaido) is not a good species, but only a form of the species under consideration. This author mentions that typical specimens of *C. purella* (LEECH) have less developed yellow markings on the forewing than the examples of *C. purella* f. *angulata* (SHIB.). However, there are all intergrades in specimens between the uniformly coloured specimens and those with distinct yellow markings. I do not consider that the latter should preserve a separate name and I sink *Crambus angulatus* SHIB. under *C. purella* (LEECH). Besides the material from Japan, Formosa and Alor Is., a series of specimens from several localities in Eastern Asia have been examined. As mentioned in the general part, *C. purella* (LEECH) is supposed to be a derivative of the preceding species. The overlapping of the ranges of the two species is not clear to me. There are no data on the occurrence of *C. paludella* (HBN.) in eastern continental Asia, however, SHIBUYA (1928b: 139 & 140) quoted that species from Saga and Sapporo, Japan. The record of ED. HERING (1903: 84) on the occurrence of *C. paludella* (HBN.) in Japan is a misidentification of the species under consideration. — The *Calamotropha flaviguttella*, INOUE (nec WILEMAN & SOUTH) in Iconographia Insectorum Ja-

ponicum is referable to *C. nigripunctella* (LEECH) (discussion see: Comments of the latter). *C. purella* ssp. *aurifusalis* (CAR.) was described from four male and female examples from Tientsin, China. I designate as the lectotype a male labelled „Tientsin“, „fa. *aurifusalis* CAR. Type“. I have verified the specimens in the CARADJA collection cited by CARADJA & MEYRICK in 1935: 23 as *Crambus aurifusalis* CAR. They are obviously identical with the typical *Calamotropha purella* (LEECH). The female from Shanghai cited by CARADJA (1932: 7) as *Crambus fulvifusalis* HMPS. belongs also undoubtedly to the species under consideration. As mentioned above, *Calamotropha purella* ab. *aurifusalis* (CAR.) shows the forewing uniformly yellowish-golden. I have found some intermediate examples between the typical *C. purella* (LEECH) and *C. purella* ssp. *aurifusalis* (CAR.). Besides the material from Tientsin I have examined some male and female specimens of this subspecies from Manchuria. Some specimens show the pattern of the forewing traceable.

#### Material examined

Lectotype of *Crambus purellus* LEECH, the label as given above; one female lectotypoid labelled as the lectotype; male GS-5605/B. M./BL., female GS-5613/B. M./BL., both coll. Brit. Mus. (N. H.); holotype of *Crambus flaviguttellus* WIL. & SOUTH, male: „♂ Tainan Formosa. 5. V. 1906. A. S. WILEMAN“, GS-5614/B. M./BL., coll. Brit. Mus. (N. H.); holotype of *Crambus chionostola* HMPS., female: „Alor Oct. 1891, W. DOHERTY“, GS-5581/B. M./BL., coll. Brit. Mus. (N. H.); holotype of *Calamotropha inouei* BŁESZ., female: „Japan“, GS-534/BL., author's coll.; lectotype (male) and three lectotypoids of *Crambus purellus* v. *aurifusalis* CAR., „Tientsin“, coll. Muz. Gr. Ant., Bucarest; several male and female specimens of *C. purella* ab. *aurifusalis* (CAR.) from Tientsin, and Manchuria, Yablonya, coll. Muz. Gr. Ant., Bucarest, coll. S. TOLL, Katowice and author's coll.; several males and females of the typical form from Manchuria, Ussuri, China and Japan, coll. Brit. Mus. (N. H.); coll. Muz. Gr. Ant., Bucarest; coll. S. TOLL, Katowice and author's coll.

#### *Calamotropha fulvifusalis* (HAMPSON)

[Pl. XXIII, Fig. 13, 14, Pl. XLVI, Fig. 106, Pl. LVII, Fig. 161, 162]

- 1900. *Crambus fulvifusalis* HAMPSON, Tr. Ent. Soc. Lond. **1900**: 371 (sp. n.).
- 1901. *Crambus fulvifusalis*, STAUDINGER & REBEL, Cat. 2: 8.
- 1927. *Crambus shibuyaee* MATSUMURA, Ins. Mats. **1** (3): 177, f. (sp. n.).
- 1928. *Crambus fulvifusalis*, SHIBUYA, J. Fac. Agr. Sapporo **21**: 124, 139, pl. III, f. 22.
- 1959. *Calamotropha fulvifusalis*, BŁESZYŃSKI, Tinea **5**: 274, pl. XXXVI, f. 2; f. 1 (genit. ♀).
- 1959. *Calamotropha asagirii* OKANO, Tr. Lep. Soc. Jap. **10** (4): 51, f. 3; f. 4 (genit. ♂) (sp. n.). **Status n.**

Ocelli absent. Antennae serrate, whitish, unicolorous. Labial palpi more than twice the length of the diameter of the eye; whitish, tinged slightly with brownish on the terminal portion. Maxillary palpi white on basal half and slightly darkened with brownish on distal half. Face barely protruding forward beyond the eye, broadly rounded; white; vertex concolorous. Patagia white,

tinged with yellowish in the central area. Thorax whitish. Forewing.  $R_1$  free. Frenulum of the female double. Costa barely arched, even at base. Apex slightly acute. Termen faintly arcuate, slightly oblique. Length 8,5—9,5 mm., maximal width 3—3,5 mm. Ground colour dull white, densely suffused with brown-ochreous scales except in the dorsal area. Basal area tinged with ochreous-yellow. Neither discal nor medial dot present. Subterminal fascia yellow, angled outward below the costa, from angle running obliquely straight to dorsum; an oblique streak from costa on either side of fascia. Medial fascia present; oblique at costa, rather straight vertical to dorsum below. Apical area tinged with yellow. No terminal dots present. Fringes white, cut by several brown bars; their ends brownish. Costal half of fringes darker than dorsal half. Hindwing glossy white, apical area with an irregular, small, brown-ochreous spot. Termen distinctly edged with ochreous-brown below apex. Fringes white, tinged with ochreous-brown in the apical portion. Under surface: Forewing brownish with dorsum lightened; hindwing white with termen faintly edged with brown below apex.

*Calamotropha fulvifusalis* ssp. *asagirii* OKANO, status n.

[Pl. XXIII, Fig. 14]

Much smaller than the typical form from Amur. Pattern in forewing better defined; ochreous-brown suffusion nearly completely reduced. From North Honshu, Japan.

Male genitalia

Uncus very long, slightly and gradually expanding caudally; apex rounded. Several long hairs on either side of base present. Gnathos more than twice as short as uncus. Tegumen normal. Valva undivided, expanding cephalad from one-quarter from apex. Costa rather arched. Apical portion clothed with short and medium-sized hairs. A slight, longitudinal fold from about middle of apex, running cephalad. Several short hairs on the ventral-central area. Pseudosaccus proportionately small and narrow. Vinculum rather small, relatively short. Aedeagus very slightly bent, rather narrow, equal to length of the total armature. A single, tapering, gently arched cornutus and minute scobinations present.

Female genitalia

Labia rather similar to those in the two preceding species. Genital plate moderate; apophyses anteriores absent. Ostium pouch rather well sclerotized, tubular. Ductus bursae lightly sclerotized throughout, moderately long, rather narrow. Bursa copulatrix rather ovate. A large and nearly rectangular signum with a medial ridge is present.

## Comments

The species was described from a few females coming from Sutchan, Amur. Of these the holotype is in the collection of the Zoologisches Museum der Humboldt Universität in Berlin and one typoid is in the collection at the British Museum (N. H.) in London. *C. fulvifusalis* (HMPS.) is a rather interesting species by reason of the double frenulum of the female. This character is constant as my study of several females from Amur and Japan has shown. It is very easily distinguishable by very characteristic coloration of the forewing.

SHIBUYA (1928a) pointed out that *Crambus shibuyaæ* MATS. is a synonym of the species under consideration. According to that author the type of *Crambus shibuyaæ* MATS. is a female, and not a male as stated by MATSUMURA (1927). That type coming from Hokkaido is in the collection at the Entomological Museum, Sapporo. Besides that specimen SHIBUYA cites three females and four males taken on Hokkaido (Mt. Daietsu; Sapporo; Hokodate). CARADJA (1932: 7) reported one female from Shanghai, but this had been a misidentification of *C. purella* (LEECH) as my study of the CARADJA collection has shown. The species discussed is an East Palaearctic element as the above data show. The recently described *Calamotropha asagirii* OKANO is apparently conspecific with *C. fulvifusalis* (HMPS.) being perhaps only a local geographical race as the study of a series specimens sent me kindly by Mr. M. OKANO has shown. This species was described from one male (holotype) and four females (allotype and three typoids) coming North Honshu, Japan (Iwate Pref., Akita Pref.). All those specimens are in the collection of OKANO. However, in Japan there occur typical specimens of *C. fulvifusalis* (HMPS.), and on the other hand, I have seen some whitened specimens from Amur.

### Material examined

Holotype — female: „Sutschau. 911, Don.“, coll. Zool. Mus. Berlin; one female typoid „Amurland, Sutschau, 1900—43“, coll. Brit. Mus. (N. H.); one male from Hakodate, prov. Oshima, Hokkaido, Japan, 19. VIII, 1902, GS-1220/B.L., coll. Brit. Mus. (N. H.); six male and female specimens of *C. fulvifusalis* ssp. *asagirii* OKANO, Noda-mura, Kunohe-gun, Iwate Pref. Japan.

### *Calamotropha azumai* BŁESZYŃSKI

[Pl. XXI, Fig. 8, Pl. LXIV, Fig. 194]

1960. *Calamotropha azumai* BŁESZYŃSKI, Pol. Pis. Ent. 30: 17, pl. III f. 3 (♀ genit.).

Female. Ocelli absent. Antenna distinctly ringed with white and brown. Labial palpi three times the length of the diameter of the eye; white, mixed with brownish from above. Maxillary palpi white. Face distinctly produced forward, rather rounded; white. Vertex, patagia, thorax and tegulae white. Forewing.  $R_1$  free. Frenulum triple. Length 12,5 mm. Costa nearly straight;

apex acute; termen straight, vertical to costa. Ground colour glossy, silvery-white; a few dark scales at the end of discal cell appear on the right wing; subterminal fascia poorly traceable, defined by several yellowish scales (visible only under enlargement). Neither discal nor terminal dots present. Fringes unicolorous glossy, silvery white. Hindwing glossy, uniformly silvery-white with fringes concolorous. Under surface: Forewing with costal area markedly darkened with brownish and termen bordered with brown; hindwing uniformly glossy white.

#### Female genitalia

Labia and genital plate proportionately small. Ostium pouch heavily sclerotized; a tuft of strong bristles on either side of ostium bursae; a distinct narrowing behind the ostium pouch. Ductus bursae very long, narrow, heavily sclerotized beyond the ostium pouch, with a single loop, further on lightly sclerotized. Bursa copulatrix elongate; signum a long sheet tapering to a sharp point at either end; clothed with numerous minute spines.

#### Comments

Because of the presence of the signum in the female genitalia I place this species next to *C. fulvifusalis* (HMPS.).

The proportionately small labia are atypical of *Calamotropha* ZELL., however, the absence of ocelli and the triple frenulum points to the position of this species in that genus. The species discussed is as yet known only from the female holotype from Japan.

#### Material examined

Holotype — female: „Koroen, Nishinomiya, 26. VI. [19]50, M. AZUMA“, GS-601/Bz., author's coll.

#### *Calamotropha aureliella* (FISCHER EDLEN VON RÖSSLERSTAMM)

[Pl. XXII, Fig. 9, 10, 11, 12, Pl. XLIV, Fig. 100, Pl. XLIV, Fig. 193]

- 1834. *Chilo Aureliellus* FISCHER EDLEN von RÖSSLERSTAMM, Abb. Beschr. Schmett. p. 261, pl. 89, f. 1 a—c (sp. n.).
- 1834. *Chilo Aurescellus* FISCHER EDLEN von RÖSSLERSTAMM, Abb. Beschr. Schmett. pl. 89.
- 1849. *Crambus aureliellus*, HERRICH-SCHÄFFER, Syst. Bearb. Schmett Eur. 4: 56.
- 1863. *Crambus aureliellus*, WALKER, List. Spec. Lep. 27: 152.
- 1863. *Calamotropha aureliella*, ZELLER, Chil. Cramb. Gen. Spec. p. 9.
- 1865. *Crambus aureliellus*, HEINEMANN, Schmett. Deutschl. u. Schweiz 1 (2): 127.
- 1871. *Crambus Aureliellus*, STAUDINGER & WOCKE, Cat. 2: 220.
- 1880. *Crambus Aureliellus*, FREY, Schmett. Schweiz p. 272.
- 1896. *Crambus aureliellus*, HAMPSON, Proc. Zool. Soc. Lond. 1895: 930.
- 1901. *Crambus aureliellus*, STAUDINGER & REBEL, Cat. 2: 5.
- 1910. *Crambus aureliellus*, SPULER, Schmett. Eur. 2: 193.
- 1910. *Crambus aureliellus* ab. *korbi* CARADJA, Dtsch. Ent. Zeit. „Iris“ 24: 111 (ab. n.).

1928. *Crambus paludellus*, SHIBUYA (nec HÜBNER), J. Fac. Agr. Hokkaido Imp. Univ. **21**: 140 (in part).

1937. *Crambus aureliellus* var. *fischeri* OSTHEIDER, Dtsch. Ent. Zeit. „Iris“ **51**: 102 (var. n.).

1937. *Crambus aureliellus* ab. *approximellus* PREISSECKER, Verh. Zool.-Bot. Ges. **87/88**: 419 (ab. n.).

1957. *Calamotropha aureliella*, BŁESZYŃSKI, Acta Zool. Crac. **1**: 461, pl. XLVII, f. 4, pl. LVIII, f. 5 (♂ genit.), pl. XCI, f. 8 (♀ genit.).

1957. *Calamotropha aureliella* ab. *approximella*, BŁESZYŃSKI, Acta Zool. Crac. **1**: 426.

1958. *Calamotropha fulvilineata* OKANO, Tinea, Tokyo, **4**: 261, f. 5, f. 6 (♂ genit.) (sp. n.).  
Syn. n.

1960. *Calamotropha kikuchii* OKANO, Tr. Lep. Soc. Jap. **11** (1): 10, f. 3, f. 10 (♂ genit.) (sp. n.). Status n.

Ocelli fully developed. Antennae unicolorous, in male brownish, in female white; of a basic *Calamotropha*-shape. Labial palpi three times the length of the diameter of the eye; yellowish. Face slightly protruding forward beyond the eye; in male brownish-golden; in female white. Vertex concolorous with face. Patagia ochreous-brown at sides and white contrally. Thorax and tegulae in male yellowish-golden, in female whitish.  $R_1$  in forewing free. Frenulum of female triple. Length of forewing: Male — average 9 mm., female — average 13 mm., maximal width — male, about 4,5 mm., female — about 5 mm. Forewing in female much more elongate than in male. Costa of male rather straight, of female gently curved. Apex of male rather rounded, of female acuminate. Termen slightly oblique, rather straight. Ground colour in male with a delicate yellowish hue; in female silvery white, glossy. Pattern in male: Subterminal fascia well defined, a complete brown-golden line, rather sharply angled outwardly below costa, straight obliquely from angle to above dorsum, then nearly vertical to dorsum and slightly excurved; on costa followed by an oblique, concolorous streak and a spot lying just before apex. Medial fascia distinct, slightly angled on costa, thence almost vertical to dorsum; complete. A few dark terminal dots above anal angle. Fringes strongly shiny, uniformly golden. In female forewing nearly unicolorous, transverse markings only rarely well defined; terminal dots in all cases present. Fringes paler than in male. Hindwing in male glossy whitish to greyish with fringes concolorous and a distinct, yellow patch near termen above anal angle. In female hindwing unicolorous white. Under surface. Male: Forewing glossy brown, nearly uniform; terminal dots are present; hindwing concolorous with the upper surface. Female: Forewing glossy white with costa narrowly darkened; hindwing concolorous with the upperside.

*C. aureliella* ab. *korbi* (CARADJA). Forewing, palpi, antennae and patagia uniformly glossy yellow-golden. An aberration described from several males from Radde, Amur. Perhaps this is a local race.

*C. aureliella* ab. *fischeri* (OSTHEIDER). Forewing distinctly darkened with gold, hindwing yellowish-golden. Described from male and female examples from Hungarian Puszta.

*C. aureliella* ab. *approximella* (PREISSECKER). An aberration described from a unique male specimen in which the forewing shows both subterminal and median fascia much approximated to each other. From Neu Aigen.

***Calamotropha aureliella* ssp. *kikuchii* OKANO, status n.**

This is obviously a subspecies of *C. aureliella* (F. R.) as the figures of male genitalia in the original description show. OKANO cites: „Nearly identical with *C. fulvilineata* OKANO [*C. fulvilineata* OKANO is synonymous with *C. aureliella* (F. R.)] from North Honshu. Ventral margin of valva less prominent; three cornuti“. The above mentioned characters are of no specific significance, being somewhat variable in *C. aureliella* (F. R.). This subspecies is very distinct by its darkened forewing, the absence of transverse fascias and the presence of a distinct discal dot, which is lacking from the typical specimens of the species under consideration. *C. kikuchii* OKANO was described from one male (holotype) and two females (allotype and typoids) coming from Kappata-yama, Shikkarimachi, Shimokita-gun, Aomori Pref., 20. VII. 1959. All in coll. OKANO. OKANO does not treat the female genitalia of the above mentioned aberration. M. OKANO in his kind letter to me writes: „SHIBUYA (1928) recorded *Crambus paludellus* from Japan based on one female collected at Sapporo (Hokkaido) and one specimen preserved in coll. of British Museum. So far I examined externally, although, the female from Sapporo is undoubtedly identical with my *kikuchii* but does not belong to true *paludella*. Do you know the specimen in coll. B. M....“. Unfortunately I was unable to find the mentioned example in the collection at the British Museum (N. H.).

**Male genitalia**

Uncus long, slender, strongly bowed ventrad; apex pointed; typical long, basal hairs are present. Gnathos very slender, bowed ventrad, with apex dilated. Tegumen normal. Valva undivided. Costa at base thickened, further rather straight, concave before apex. The latter sharply acute. Anal margin obliquely truncate, anal-ventral margin with a rather triangular, heavily sclerotized, small projection. Ventral margin straight to two-thirds from apex, thence broadly projected. Pseudosaccus well developed. Vinculum normal, projected cephalad. Aedeagus long and slender, gently bent; vesica armed with three rather large, pointed cornuti; they are straight with bases thickened. Very often one or two cornuti are lost during copulation.

**Female genitalia**

Labia with caudal margins straight, posterior apophyses moderately dilated in basal half. Genital plate broad, anterior apophyses long, markedly expanding from midway from apices. Ostium pouch large, heavily sclerotized, faintly

wrinkled, with a transparent membrane around; the opening situated ventrally, large, truncate. Ostium pouch linked to genital plate with a delicate membrane. Ductus bursae narrow, lightly sclerotized throughout. Bursa copulatrix rather elongate; so signum present.

### Comments

This species is very interesting because of the presence of fully developed ocelli. However, other characters of facies and genitalia of both sexes are typical of *Calamotropha* ZELL. *C. aureliella* (F. R.) is as yet known from Central and Central-Southern Europe, Amur and Japan. *Calamotropha fulvilineata* OKANO described recently from Japan is obviously conspecific with *C. aureliella* (F. R.). OKANO in his description for *C. fulvilineata* OKANO mentions: „This new species is closely similar to *Calamotropha aureliella* (FISCHER v. RÖSSLERSTAMM) from Europe, but is clearly separable from it by the situation of a mass of hairs on the hind wing in male. In *fulvilineata* the mass of hairs is situated in the lower part of the hind wing, while in *aureliella* it is in the upper part. The aedeagus of *fulvilineata* is provided with two cornuti against three in *aureliella*“. The female genitalia are not treated or figured. OKANO is wrong considering that the yellow patch („mass of hairs“) on the hindwing of *C. aureliella* (F. R.) is situated in the upper part of the wing. This patch lies apparently on the same area in both *C. aureliella* (F. R.) and *C. fulvilineata* OKANO. The lack of the third cornutus in the aedeagus of *C. fulvilineata* OKANO is of no specific significance, as the cornuti are very often lost during copulation. As a good illustration is *Crambus hortuellus* (HBN.). I have found males of that species with three, four or five cornuti. *Calamotropha fulvilineata* OKANO is described from 17 males (holotype and typoids) and two females (allotype and a typoid) from Kuriyagawa, Morioka, North Nonshu, 4. VII. 1948, 6. VII. and 9. VII. 1957. Some days ago I have received from OKANO two males and one female of *C. fulvilineata* OKANO from Morioka. After examining of these specimens and their genitalia I have stated that *C. fulvilineata* OKANO is undoubtedly identical with *C. aureliella* (F. R.). The specimens from Japan are strikingly similar on facies and genitalia to the European specimens. This is very interesting from the evolutional point of view that there are no differences between the populations from Europe and Japan. — *C. aureliella* ab. *korbi* (CAR.) was described from five females from Radde, Amur. Perhaps this form represents a distinct local race. Too little material is available for study to solve this problem. I designate as the lectotype of *Crambus aureliellus* var. *korbi* CARADJA a female labelled „Radde [19]03, KORB“. — The question of *Calamotropha aureliella* ssp. *kikuchii* OKANO described recently as a distinct species is discussed above. — *C. aureliella* ab. *fischeri* (OSTH.) was mentioned by FISCHER v. RÖSSLERSTAMM as „var.“ and figured on plate 89, fig. c. This aberration was subsequently mentioned by several

authors as HEINEMANN (1865: 127) or HERRICH-SCHÄFFER (1849: 56). *C. aureliella* ab. *fischeri* (OSTH.) is an analogical form to *C. aureliella* ab. *korbi* (CAR.). However, forewing in the former is more darkened gold than in the latter.

#### Material examined

Several male and female specimens from Hungary, Roumania, Macedonia and Morioka, Japan [including ab. *fischeri* (OSTH.)], coll. Brit. Mus. (N. H.), Nathist. Mus., Vienna, Muz. Gr. Ant., Bucarest, A. POPESCU-GORJ, Bucarest, S. TOLL, Katowice and author's coll. Holotype of *Crambus aureliellus* ab. *approximellus* PREISSECKER, male, Neu-Aigen, coll. Nathist. Mus., Vienna; lectotype and lectotypoids of *Crambus aureliellus* var. *korbi* CAR., coll. Muz. Gr. Ant., Bucarest; one female spec. from Buchara, coll. Nathist. Mus., Vienna.

#### *Calamotropha yamanakai* INOUE

[Pl. XLVI, Fig. 105, Pl. LVIII, Fig. 163, 164]

1958. *Calamotropha yamanakai* INOUE, Tinea, 4: 257, f. 1 (♂ genit.), f. 2 (♀ genit.) (sp. n.).

1959. *Calamotropha yamanakai* INOUE, Icon. Ins. Jap. 1: 235, pl. 166, f. 4.

Original description: „Palpus more than three times as long as diameter of eye, dorsal surface white, mixed with grey and dark grey, outer side darker, ventral surface as whitish as dorsal, maxillary palpus and head above whitish, sparsely mixed with fuscous scales, antenna brownish, basal part darker, thorax above white and grey, abdomen above white, tinged with pale yellowish brown, hindleg with tibia and tarsus fuscous outside and whitish inside. Forewing white, irrorated with dark grey scales, costal margin narrowly fuscous as basal half, brownish at outer half, discocellular dot black, transverse lines brown, median line quite characteristic in its strongly zigzag shape, starting at costa about 5 mm. from base, running straight to cellule 5, acute-angled just outside discal dot, a brownish fascia from this angle to subterminal line along  $M_1$ , acute-angled at origin  $Cu_2$  and beyond 1st A, obliquely running into middle of hindmargin, subterminal line curved outward at middle, terminal area more or less darker near apex, termen dotted with black, fringe white with brown. Hindwing white, costal and terminal area more or less darker, termen and base of fringe narrowly dark brown. Under surface, forewing fuscous, distal half of costal area paler, hindwing with costal half fuscous, remaining area whitish, both wings with fringes white, faintly mixed with brown. Length of forewing: 12—13 mm. (aestival specimen, 9 mm)...“.

#### Male genitalia

Uncus slightly curved ventrad.

Gnathos decidedly longer than uncus; basal part projected ventrally, apical part long, slender, narrowly rounded. Tegumen relatively short. Valva undivided, in shape of a long triangle. Costa lacks hair; nearly straight. Apex haired,

projected dorsad. Ventral margin bowed, hairy. A small projection provided with several long hairs about the middle of the membrana valvae interna. Pseudosaccus long. Vinculum large, but somewhat shorter than the valva. Aedeagus a little shorter than the total armature, straight, narrow. Vesica armed with a single rather short cornutus, which is situated apically.

#### Female genitalia

Labia broad, with caudal margins rather concave. Posterior apophyses long, not dilated basally. Genital plate normal with anterior apophyses proportionately short; curved. Ostium pouch ovate, rather heavily sclerotized, well coalescent with genital plate; ostium bursae clothed with minute spines. Ductus bursae very, narrow, lightly sclerotized throughout. Bursa copulatrix rather ovate, no signum present.

#### Comments

This species recently described from Japan is known to me only from the original description and a figure in *Iconographia Insectorum Japonicorum* and the sketches of the genitalia of the holo- and the allotype sent me by Mr. H. INOUE. *C. yamanakai* INOUE is a typical member of the genus under consideration. It was described from three male and one female specimens. Holotype — male: „Fukumitsu, Toyama Pref., 10. VI. 1958 (YAMANAKA); allotype — female: labelled as holotype (M. MOCHIZUKI); typoids: Maninuma, Shizuoka Pref., and Yotsuike, Hamamatsu City; all in coll. INOUE. One female of this species is in the collection of M. OKANO, who has kindly sent me a sketch of the genitalia; this specimen comes from Kuzakai, Shimohei-gun, Iwate Pref., 12. VII. 1959. M. OKANO. leg.

#### *Calamotropha franki* (CARADJA)

[Pl. XXIII, Fig. 15, Pl. LIX, Fig. 172]

1931. *Crambus franki* CARADJA, Bull. Acad. Roum. **14**: 204 (sp. n.).

Female. Ocelli absent, however, one of the two examined females shows a vestigial light ocellus on the right side of the head. Antenna flatly serrate, uniformly light brown. Labial palpi three and one half times the length of the diameter of the eye; beige, sprinkled with tiny brown specks; apical portion whitened. Maxillary palpi beige on base; a dark brown ring in the middle; terminal half whitish. Face rounded, slightly protruding forward before the eye; whitish. Vertex concolorous with the face. Patagia brown at sides and lightened whitish centrally. Tegulae brown, whitish terminally. Thorax creamy. Length of forewing 13 mm., maximal width 5 mm.  $R_1$  runs freely.

Frenulum in the holotype double and in the other female triple. Costa slightly arched, apex minutely rounded; termen little curved, nearly vertical to costa. Forewing markedly glossy, ground colour whitish, densely suffused with brown scales. Discal dot black brown, very distinct. Subterminal fascia rather well visible, a brown line broadly excurved without any indentation above the dorsum. Medial dot absent. Medial fascia decidedly less distinct than the subterminal fascia, sharply angled below the costa, with a tooth basalwards just below the wing middle; obliquely straight on dorsum. Terminal dots brown black, very distinct, seven in number. Several short, brown streaks from termen among the terminal dots. Fringes decidedly glossy, light brown; basal stripe dark, very narrowly white at its very base. Hindwing distinctly glossy, pale whitish beige, a little lightened on dorsal area; termen delicately bordered with darker. Fringes dirty creamy, glossy. Under surface: Forewing glossy, uniformly brownish with discal dot poorly traceable. Hindwing concolorous with the upper surface.

#### Female genitalia

Labia with caudal margins concave; basal strengthenings very distinct, wide; apophyses posteriores distinctly dilated from two-fifths from their apices. Genital plate normal with apophyses anteriores proportionately short. Ostium pouch distinctly coalescent with the genital plate for a markable abscissa; rather heavily sclerotized, rather ovate minutely and densely spined, with a rather large, rounded orifice posteriorly. Ductus bursae narrow, delicately, longitudinally wrinkled, lightly sclerotized, even to length of bursa copulatrix. The latter ovate, large, densely, minutely scobinate. No signum present.

#### Comments

This species was described from a unique female specimen from Kwanshien, China. The other female coming from Kuantun, Prov. Fukien, China is determined as belonging to *C. franki* (CAR.). CARADJA did not mention this female in any of his papers. *C. franki* (CAR.) is a typical representative of the genus *Calamotropha* ZELL. Very markable characters of the species in question are the complete absence of the medial dot in the forewing and the dorsal tooth of the subterminal fascia. The fact that one of the two examined females has the frenulum double and the other female has the frenulum triple is of much interest. This points that the number of branches of frenulum in the members of the genus *Calamotropha* ZELL, may be variable in individual species.

#### Material examined

Holotype — female: „Kwanhsien. 12. VII“, GS-1729/B.L.; one female from Kuantun, Prov. Fukien, China, both in coll. Muz. Gr. Ant., Bucarest.

***Calamotropha obliterans* (WALKER)**

[Pl. XXIV, Fig. 20, Pl. XLVII, Fig. 111, Pl. LXVI. Fig. 204]

1863. *Crambus obliterans* WALKER, List. Spec. Lep. 27: 169 (sp. n.).

1863. *Crambus candidifer* WALKER, List. Spec. Lep. 27: 170 (sp. n.).

1896. *Crambus obliterans*, HAMPSION, Proc. Zool. Soc. Lond. 1895: 934.

Ocelli absent. Antennae uniformly brownish of a basic *Calamotropha*-shape. Labial palpi three times the length of the diameter of the eye; yellowish-brownish and whitened from above. Maxillary palpi brownish on basal half, and whitish on distal half. Face barely protruding forward beyond the eye; broadly rounded; whitish. Vertex concolorous. Forewing.  $R_1$  free. Frenulum of the female triple. Length 7—9,3 mm., maximal width 2,2—3,2 mm. Costa faintly arcuate, apex rather rounded, termen hardly arched, nearly vertical to costa. Ground colour glossy dirty whitish-creamy, suffused with brown scales. Costa distinctly bordered with a brown shade. A triangular brown spot on costa just before apex. Subterminal fascia is a delicate, brown, double line; broadly excurved, running rather near termen. Medial fascia is a delicate brown line strongly, triangularly projected basad midway from costa; the tip of the projection is marked by a brown medial dot. The latter situated just in the wing centre. Discal dot moderate. Terminal dots rather amalgamated with each other to a brown line. Fringes glossy, uniformly creamy. Hindwing glossy, dirty creamy with termen barely darker and fringes concolorous with the ground. Under surface glossy; terminal area of forewing whitened, subterminal fascia treceable.

**Male genitalia**

Uncus very long and slender with tip decidedly pointed and curved ventrad. Gnathos slender, barely longer than uncus; tip bulbous. Tegumen normal. Valva undivided; costa lacks hair, decidedly bowed, projected caudad to a large, curved ventrad, hairy apex. Caudal margin deeply notched. Ventral-caudal portion in form of a hairy, large, triangular projection. Vinculum large, tapering cephalad. Pseudosaccus well developed. Aedeagus barely shorter than the total armature, straight. Vesica armed with two distinct cornuti, one of them being decidedly longer than the other.

**Female genitalia**

Labia with caudal margins rather straight; posterior apophyses swollen midway from apices and distinctly dilated basally. Genital plate broad with anterior apophyses long. Ostium pouch moderately sclerotized, thickly clothed with minute spikes; cephalad sclerotization weak. Ductus bursae narrow, lightly sclerotized throughout. No signum present on the bursa copulatrix.

## Comments

This species described by WALKER from Borneo has hitherto been confused with the subsequently described from China and Japan *C. okanoi* sp. n. All the references from Palaearctic parts of Asia regarding *C. oblitterans* (WALK.) should be referred to *C. okanoi* sp. n. I have examined the type of *Crambus oblitterans* WALK. and *Crambus candidifer* WALK., as well two other females from Borneo labelled by WALKER. The types of the two WALKER species are also females. Unfortunately I have not found in any collection any male specimen taken in Borneo. However, I have studied a male from Palawan. This seems to be conspecific with *Calamotropha oblitterans* (WALK.). The facies of both *C. oblitterans* (WALK.) and *C. okanoi* sp. n. is rather similar to each other, but the apex of the forewing in the former is rather rounded and decidedly acuminate in the latter. Both species are rather variable in colour and size. Subsequently described *C. formosella* sp. n. is also very close to the species under consideration being but very distinct on its male genitalia. The genitalia of both sexes in *C. oblitterans* (WALK.) and *C. okanoi* sp. n. are very distinct as is shown in the figures. Very possibly that the two females labelled „SAR [awak]“ of *C. oblitterans* (WALK.) are syntypes of this species, however, WALKER in his original description did not mention the number of the types. Similar situation is with the WALKER *Crambus candidifer*. WALKER writes: „Mas. Foem.“ but I have not found any male of this species in the collection of the British Museum (N. H.).

### Material examined

Holotype of *Crambus oblitterans* WALKER: „Sarawak, SAUNDER'S coll. 84—68“, GS-5593/B. M./Bl.; holotype of *Crambus candidifer* WALKER: „Sarawak, SAUNDER'S coll. 84—68“, GS-5606/B. M./Bl.; one female without abdomen labelled as preceding examples; one female: „Sar[awak]“, „74—69“, without abdomen; one male: „Taytay, Palawan. Plains. 13. IV. 1913, A. E. WILEMAN“, GS-1643/Bl. — all specimens in coll. Brit. Mus. (N. H.).

### *Calamotropha formosella* sp. n. ♂

[Pl. XXIV, Fig. 18, Pl. XLVII, Fig. 112]

Male. Ocelli absent. Antenna distinctly serrate, uniformly brown. Labial palpi more than twice the length of the diameter of the eye; pale brownish whitened from above. Maxillary palpi brownish on basal half and white on distal half. Face broadly rounded, barely protruding forward beyond the eye; white; vertex concolorous. Patagia pale brownish at sides and whitish centrally. Thorax and tegulae brownish. Forewing.  $R_1$  free. Length 8,5 mm., maximal width 2,8 mm. Costa nearly straight, apex fairly acute, termen straight. Scaling rather rubbed. Ground colour yellowish, suffused with brown scales. Discal dot well defined; an indication of medial dot in two-fifths from wing base. Subterminal fascia traceable. Fringes damaged. Hindwing pale greyish; fringes damaged, rather whitish. Under surface glossy with no markings.

### Male genitalia

Uncus very slender, barely arched with tip pointed. Gnathos similar to that in *C. obliterans* (WALK.). Tegumen normal. Valva undivided, deeply notched terminally. Costa nearly straight, broadly, well sclerotized to near apex; hairs present in terminal one-third. Apical projection rather lightly sclerotized, broadly rounded. Ventral triangular projection rounded, hairy. A narrow, hairy fold running longitudinally above the middle of valva. Pseudosaccus well developed. Vinculum tapering cephalad. Aedeagus similar to that in the preceding species. Vesica armed with a single cornutus.

### Comments

This new species is described from a unique male specimen from Kanshirei, Formosa. It is very close to but perfectly distinct from *C. obliterans* (WALK.) as is shown in the figures of the male genitalia of the two. The presence of two cornuti in *C. obliterans* (WALK.) and only one cornutus in the new species is not considered by the author as of specific significance. Cornuti are often lost during copulation.

### Material examined

Holotype — male: „Kanshirei, Formosa, April 1909“, GS-1332/BL., coll. Brit. Mus. (N. H.).

### *Calamotropha okanoi* sp. n.

[Pl. XXIV, Fig. 19, Pl. XLVII, Fig. 113, Pl. LVIII, Fig. 165]

- 1901. *Crambus obliterans*, SOUTH (nec WALKER), Trans. Ent. Soc. Lond. **1901**: 391.
- 1905. *Crambus obliterans*, MATSUMURA (nec WALKER), Cat. Ins. Jap. p. 191.
- 1915. *Crambus bipunctellus* SUZUKI, List Spec. Hanazono Ent. Labr. p. 23 [nomen nudum].
- 1927. *Crambus obliterans*, CARADJA (nec WALKER), Mem. Sect. Științ. Acad. Rom. (3) **4**: 395.
- 1928. *Crambus obliterans*, SHIBUYA (nec WALKER), J. Col. Agr. Hokkaido Imp. Univ. **21**: 138, pl. II, f. 21.
- 1935. *Crambus obliterans*, CARADJA & MEYRICK (nec WALKER), Mat. Microlep.-Fauna chin. Prov. Kiangsu, Chekiang und Hunan p. 23.
- 1959. *Calamotropha obliterans*, BŁESZYŃSKI (nec WALKER), Tinea **5**: 275, pl. XXXVI, f. 7 (♂ genit.).
- 1959. *Calamotropha obliterans*, INOUE (nec WALKER), Icon. Ins. Jap. p. 166, pl. 166, f. 2.

In facies rather similar to *C. obliterans* (WALK.). Costal shade in the forewing in most instances less developed. Apex of forewing rather acuminate, being rounded in *C. obliterans* (WALK.). Length of forewing 6—9 mm., maximal width 2,2—3 mm.

### Male genitalia

Uncus slender, slightly bowed, with tip more or less pointed. Gnathos barely shorter than uncus, being longer in *C. obliterans* (WALK.); tip not swollen. Tegumen normal. Valva with terminal notch very small in relation to

two preceding species. Costa distinctly bowed, lacks hair, strongly sclerotized; terminal projection small, triangular. Caudal-ventral portion rounded with short hairs. Pseudosaccus well developed. Vinculum proportionately visibly longer than in the two preceding species. Aedeagus rather straight, narrow, a little shorter than the total armature; terminal portion armed with a heavily sclerotized, distinctly dentate plate, which is visible only from dorsal side. No cornuti present.

#### Female genitalia

Labia with caudal margins rather straight; basal strengthenings narrow, broad; apophyses posteriores not dilated basally. Genital plate normal with posterior apophyses narrow throughout. Ostium pouch linked to genital plate with a delicate membrane; rather lightly sclerotized, narrow, thickly clothed with very minute spikes. Ductus bursae long, narrow, lightly sclerotized throughout. Bursa copulatrix rather ovate; no signum present.

#### Comments

This new species is described from a series of male and female specimens from China, Manchuria, Korea and Japan. All these specimens were published or determined as belonging to *C. obliterans* (WALK.). I have examined the specimens cited by CARADJA (1927: 395) and CARADJA and MEYRICK (1935: 23). *C. okanoi* sp. n. is rather similar on facies to *C. obliterans* (WALK.), however, perfectly distinct on the genitalia of both sexes as shown in the figures. In addition, the apex of the forewing in the new species is decidedly more acute than in *C. obliterans* (WALK.).

The new species is named in honour of Mr. M. OKANO of Morioka, Japan.

#### Material examined

Holotype — male: „14. VIII. 1960, Noda-mura, Kunohe-gun, Iwate Pref., coll. KODA“, author's coll.; allotype — female: „Kōriyama, Nara, 15. IX. 1950, T. Imamoto“, GS-1623/B<sub>L</sub>., author's coll.; two male typoids labelled as holotype, author's coll.; one male typoid: „Kugenuma, Fujisawa, 28. IX. 1957, H. INOUE“, GS-545/B<sub>L</sub>., coll. H. INOUE; two male typoids: „Lungtan bei Nanking, Prov. Kiangsu, China, 22. V. [and] 14. IX. 1933, H. HÖNE“, GS-1743/B<sub>L</sub>., coll. Muz. Gr. Ant., Bucarest; one male typoid: „Szetschwan Omissien, Exp. STÖTZNER“, coll. Muz. Gr. Ant., Bucarest; one male typoid from Japan, GS-546/B<sub>L</sub>., coll. Brit. Mus. (N. H.); one male typoid from Fujisawa, Japan, coll. H. G. AMSEL; three female and two male typoids from Manchuria (Kaolingtsu Station, Prov. Kirin; Hsiaoling, Prov. Kirin), VII—VIII. 1939—1940, GS-813/TOLL, GS-814/TOLL, GS-1625/B<sub>L</sub>., coll. S. TOLL; one male typoid from Manchuria, Hsiaoling, 19. VIII. 1939, author's coll; 1 female typoid from Korea, coll. Zool. Inst. Acad. Sc. USSR, Leningrad; Mr. M. OKANO of Morioka has kindly sent me a list of the specimens of this species in his collection. These are: Kuriyagawa, Morioka, Iwate Pref., 30. VI. 1957, one female; 26. VI. 1957, two males; 6. VII. 1957, one female; 4. VII. 1958, one male, two females; 23. VI. 1959, two males; 26. VI. 1960, one male; 2. VII. 1960, three males, one female — all M. OKANO leg.; Antaroma, Kamikawa-gun, Hokkaido, 21. VII. 1960, one female, M. OKANO leg. I designate all above examples as the typoids of *Calamotropha okanoi* sp. n.

***Calamotropha subterminella* (WILEMAN & SOUTH), comb. n.**

[Pl. XXIV, Fig. 17, Pl. LXII, Fig. 185]

1917. *Crambus subterminellus* WILEMAN & SOUTH, Ent. 5: 148 (sp. n.).

1928. *Crambus subterminellus*, SHIBUYA, J. Fac. Agr. Hokk. Imp. Univ. 22: 46.

Female. Ocelli absent. Antenna flatly serrate, uniformly pale brownish. Labial palpi three times the length of the diameter of the eye; labial and maxillary palpi beige. Face broadly rounded, not protruding forward beyond the eye, white; vertex concolorous. Patagia, thorax and tegulae pale beige.  $R_1$  in the forewing free. Frenulum triple. Length 12,5—13 mm., maximal width 4—4,5 mm. Costa very gently arched, apex rather acute, termen fairly straight and nearly vertical to costa. The latter edged with brown in the basal portion. Ground colour glossy dirty creamy, tinged with yellowish hue in the central area. Discal dot well marked. Medial dot absent. Subterminal fascia a distinct line angled outwardly below the costa; its lower part obliquely straight. Terminal dots rather poorly defined, visible only above the tornus. Fringes rather paler than the ground colour. Hindwing glossy dirty pale greyish-whitish; fringes concolorous. Under surface glossy, uniform; forewing darker than the hindwing.

Genitalia

Labia with caudal margins rather concave, posterior apophyses triangularly dilated in two-fifths from bases. Genital plate broad, anterior apophyses normal. Ostium pouch linked to genital plate with a narrow bridge; short, heavily sclerotized. Ductus bursae lightly sclerotized throughout, extremely finely wrinkled beyond the ostium pouch. Bursa copulatrix elongate; no signum present.

Comments

The species was described from two female specimens from Kanshirei, Formosa (1000 ft.). The two are in the collection of the British Museum (N. H.). The holotype lacks the abdomen. This species is a typical member of the genus in question. It is distinct in both, pattern and genitalia. The resemblance to *C. tonsalis* (WALK.) quoted in the original description is rather imaginary. As far as I know no further specimens besides the mentioned types have as yet been found.

Material examined

Holotype — female: „♀ Kanshirei, Formosa 1000 ft. 10. XI. 1908. A. S. WILEMAN“; one female typoid also from Kanshirei, taken on 15. VI. 1906, GS-1212/BL., both in coll. Brit. Mus. (N. H.).

***Calamotropha albistrigella* (HAMPSON), comb. n.**

[Pl. XXXI, Fig. 46, Pl. XLVIII, Fig. 120]

1896. *Crambus albistrigellus* HAMPSON, Proc. Zool. Soc. Lond. 1895: 927 (sp. n.).

Male. Ocelli absent. Antenna uniformly brownish, distinctly serrate. Labial palpi about three times the length of the diameter of the eye; light brown, apical joint whitened from above. Maxillary palpi brown on basal half and whitish on distal half. Face broadly rounded, not protruding forward beyond the eye; whitish. Vertex concolorous with face. Patagia brown with central area lightened creamy. Thorax and tegulae brown. Forewing.  $R_1$  free. Wingspan 24 mm. Costa barely arched at base, then straight; apex decidedly acuminate; termen almost vertical to costa, straight; tornus broadly rounded. Ground colour very slightly glossy, brown. Veins delineated with light. Discal dot well defined, proportionately rather large. Terminal dots rather distinctly marked. No subterminal fascia present. Hindwing dirty greyish, delicately tinged with darker along the peripheries. Fringes glossy whitish. Under surface: Forewing uniformly brown; hindwing with costal area darkened.

Genitalia.

Uncus markedly curved ventrad, very slender, tapering terminally to a curved, acuminate apex. Typical long hairs at the base of uncus present. Gnathos broadly curved dorsad, about as long as uncus; slender, faintly dilated and rounded terminally. Tegumen proportionately rather short. Valva undivided. Costa curved, broadly well sclerotized; hair lacking. Apical area clothed with hairs of medium length. Anal ventral angle markedly notched. Ventral edge simple, well sclerotized throughout. Inner surface of valva clothed with short, stout, curved spines. Pseudosaccus well developed, elongate. Vinculum a trifle longer than valva, tapering cephalad. Aedeagus nearly equal to length of the total armature; basal portion bent ventrad; terminal portion somewhat tapering; vesica scobinate towards apex.

Comments

This species was described from a unique male specimen from Bonin Islands. As far I know no further examples of this remarkable species have as yet been found. This is a typical member of the genus, however, the distinctness of the genitalia is great.

Material examined

Holotype — male: „Perry's Group Bonin Islands, 89—113. June [18]89“, GS-5522/B. M./B.L., coll. Brit. Mus. (N. H.).

*Calamotropha boninella* (SHIBUYA), comb. n.

1929. *Crambus boninellus* SHIBUYA, Ins. Mats. 3: 111 (sp. n.).

I have had no opportunity to examine the type of this species. It was described from Bonin Islands from a unique male specimen. Nothing more than the original description before me. This indicates that the species should be placed in *Calamotropha* ZELL. Original description: „♂. Palpi Brown. Head greyish. Thorax brown. Fore wing pale brown, at the apical area somewhat paler; with white longitudinal streaks along costa and in cell, the former becoming obsolete towards the middle, and the latter broader than the former, terminating at termen, and bordered by a black line at the basal half of the lower edge; a terminal series of black spots, which is indistinct on the costal half. Hind wing whitish, very slightly tinged with brown. Under surface of each wing pale brown, without markings. Expanse of wings 20 mm. A single male specimen was taken in Chichjima by Prof. S. MATSUMURA in August 1905. Habitat: Bonin Islands, Chichjima“.

*Calamotropha famulella* (WALKER), comb. n.

[Pl. XXXII, Fig. 52, Pl. XLVII, Fig. 114, Pl. LXVI, Fig. 205]

1866. *Araxes famulella* WALKER, List. Spec. Lep., 35: 1765 (sp. n.).

1896. *Crambus famulellus*, HAMPSON, Proc. Zool. Soc. Lond. 1895: 934.

Ocelli absent. Antenna uniformly pale brownish, of a basic *Calamotropha*-shape. Labial palpi two and one half times the length of the diameter of the eye; light brown. Maxillary palpi light brown except for terminal one-third is white. Face not protruding forward beyond the eye, white. Vertex whitish. Patagia, thorax and tegulae creamy beige. Forewing.  $R_1$  runs freely. Frenulum of the female triple. Length 6,5 mm., maximal width 2,5 mm. Costa straight at the base; apex narrowly rounded; termen gently oblique, rather bowed. Ground colour dull, pale creamy beige. Pattern brown. Medial dot well defined, dark brown, situated at three-fifths from base of the wing, just below the middle of the wing width; it lies on the run of the trace of medial fascia. Sub-terminal fascia brown, poorly defined, broadly excurved in the upper part and with a distinct, tooth-like projection above dorsum. Terminal dots well defined from apex up to anal angle. No discal dot present. Fringes rather glossy, unicolorous creamy. Hindwing glossy white with fringes concolorous. Under surface: Forewing glossy uniformly pale beige; hindwing glossy whitish tinged with beige on the costal area.

Male genitalia

Uncus very long and slender, barely arched ventrad, apex pointed. Gnathos longer than uncus, bent dorsad in one-third from base, very gently expanding posteriorly; apex rounded. Typical long, basal hairs of the uncus present. Tegumen proportionately short. Valva undivided; costa slightly concave beyond

the base, bowed terminally; apical portion projected in a short triangle; ventral edge decidedly bowed. A slight fold below the costa terminally; another poorly hairy fold above the ventral margin centrally. Hairs poor, scattered over the apical area. Several stout, short bristles on the inner surface of valva. Pseudosaccus well developed. Vinculum nearly as long as valva, slightly tapering cephalad. Aedeagus narrow, decidedly shorter than the total armature; it is bent in one-third from base; vesica armed with two large cornuti of equal length.

#### Female genitalia

Labia with caudal margins slightly concave, basal strengthenings distinct, broad; posterior apophyses very long and slender throughout. Genital plate normal. Ostium pouch lightly sclerotized, broader than ductus bursae. The latter rather short, lightly sclerotized. Bursa copulatrix ovate; no signum present.

#### Comments

The species is very distinctive in its facies and armature of the genitalia of both sexes, however, it is a typical member of the genus. Very characteristic is the liggely sclerotized ostium pouch in the female genitalia, which is not met with in other species of *Calamotropha* ZELL. *C. famulella* (WALK.) has as yet been found only in Ceylon and in Tonkin. The holotype unfortunately lacks the head and abdomen, however, several males and females coming from Ceylon agree perfectly in their facies with the holotype. The latter is only a trifle more darkely coloured than the compared examples. CARADJA (1938 b: 251) writes: „*C. famulellus* MEYR. (Autor?). Ausser von Lungtan (Kiangsu) auch von Formosa“. Unfortunately I have not found in the CARADJA collection any specimen from Lungtan determined as „*Crambus famulellus*“. The specimens from Formosa determined as that species belongs undoubtedly to a species of the genus *Chilo* HBN. Consequently one can suppose that the specimens from Lungtan were also incorrectly determinated by CARADJA.

#### Material examined

Holotype — male: „Ceylon“, coll. Brit. Mus. (N. H.); three males and six females from Ceylon, GS-683/B.L. ♀, GS-1213/B.L. ♂; one female Haiphong, Tonkin, GS-682/B.L., coll. Brit. Mus. (N. H.).

#### *Calamotropha argenticilia* (HAMPSON), comb. n.

[Pl. XXVII, Fig. 30, Pl. XLVI, Fig. 107, Pl. LXI, Fig. 180]

1896. *Crambus argenticilia* HAMPSON, Proc. Zool. Soc. Lond. 1895: 937 (sp. n.).

Ocelli absent. Antenna white, of a basic *Calamotropha*-shape. Labial palpi twice the length of the diameter of the eye; pale brownish; apical joint white. Maxillary palpi brownish on basal half and pale whitish on distal half. Face

not protruding forward beyond the eye, white. Vertex concolorous. Patagia white with sides tinged with yellowish. Thorax and tegulae pure white. Forewing.  $R_1$  coincident with  $Sc$ . Frenulum of the female double. Length 6,5—7,5 mm., maximal width 2,5—3,2 mm. Costa rather straight; apex rounded; termen nearly vertical to costa, straight. Ground colour glossy silvery-white. Two transverse fascias fairly distinct, or traceable; yellow. Subterminal fascia broadly excurved to middle of the wing, thence slightly angled basad; vertical to dorsum. Medial fascia slightly incurved above middle of wing. Discal dot and medial dot both absent. Termen bordered with a glossy brown-golden line. Fringes strongly shiny steely-brown. Hindwing glossy silvery-white, in some instances slightly tinged with a yellowish hue. Under surface: Forewing uniformly glossy yellowish; hindwing glossy white.

#### Male genitalia

Uncus slender, gently arched ventrad, gradually tapering to a point. Typical basal, long hairs are present. Gnathos narrow, somewhat shorter than uncus, rounded apically. Tegumen normal, slightly expanding ventrad. Valva undivided, rather heavily sclerotized throughout. Costa concave at base, then straight, with a small, narrow process before the end. Anal margin broadly rounded, gently sinuate. Ventral margin with a deep, narrow notch beyond midway from base. Hairs scattered over the apical portion and the medial-ventral area. Pseudosaccus well developed. Vinculum broad, tapering cephalad, truncate terminally. Aedeagus narrow, long, rather decidedly bent ventrad. Two moderately sclerotized, elongate, dentate proximally lamellas towards the apex of aedeagus present.

#### Female genitalia

Labia with caudal margins rather decidedly concave; posterior apophyses broadly dilated medially. Genital plate rather normal. Ostium pouch a large, heavily sclerotized bowl. Ductus bursae lightly sclerotized, slightly expanding towards bursa copulatrix. The latter minutely scobinate; no signum present.

#### Comments

Because of the double frenulum of the female the species in question is an atypical representative of the genus. However, other characters of facies and genitalia are typical of *Calamotropha* ZELL. I place *C. argenticilia* (HMPS.) next to *C. melanosticta* (HMPS.) as the two have a double frenulum in the female. However, both species are perfectly distinct and easy to distinguish on wing pattern, as well as by the armature of the genitalia of both sexes. The best feature that separates the two species is the presence of a distinct medial dot in the forewing of *C. melanosticta* (HMPS.) and the absence of it

in the species under consideration. The latter is rather similar to [*Crambus*] *peralbellus* Hmps. from Africa, however, the ranges of the two do not overlap. The lectotype, male, from Ceylon is designated.

#### Material examined

Lectotype—female (not male as stated by HAMPSON); „Ceylon 92—56“, GS-5616/B. M./BL., coll. Brit. Mus. (N. H.); seven males and females (including lectotypoids) from Ceylon, Konga Valley, Bhutan and Sikkim (GS-1576/BL.-♂, GS-1556/BL.-♀—lectotypoids from Ceylon), coll. Brit. Mus. (N. H.).

#### *Calamotropha melanosticta* (HAMPSON), comb. n.

[Pl. XXVII, Fig. 31, Pl. XLVI, Fig. 108, Pl. LXI, Fig. 178, 179]

1896. *Crambus melanosticta* HAMPSON, 1895, Proc. Zool. Soc. Lond. 1895: 937 (sp. n.).

Ocelli absent. Antenna yellowish to brownish, of a basic *Calamotropha*-shape. Labial palpi three times the length of the diameter of the eye; pale yellowish to yellow, white from above and on side above. Maxillary palpi yellow on basal half and white on distal half. Face broadly rounded, barely protruding forward beyond the eye; white. Vertex concolorous. Patagia white, in some instances with a pale yellow, poorly defined fascia on either side. Thorax and tegulae white.  $R_1$  in the forewing coincident with  $Sc$ . Frenulum of the female double. Length of forewing 6,5 to 8 mm., maximal width 2,4—3,8 mm. Ground colour glossy snow-white. Subterminal fascia is a narrow delicate, ochreous-brown line from costa up to dorsum; it is followed on costa by an oblique concolorous streak; broadly excurved, distinctly tooth-like projected above dorsum. A small yellow to brown speck at costa in the apical area. Medial fascia poorly defined, in some instances nearly invisible; it is excurved above and projected basad in the middle of the wing. Medial dot brown, very distinct, rather large; it is situated at the end of the projection of the medial fascia. Termen narrowly but distinctly bordered with dark brown. Fringes metally shiny steely-golden, unicolorous. Hindwing glossy snow-white to creamy-white with fringes concolorous. Termen sometimes very feebly bordered with darker below apex. Under surface: Forewing unicolorous brownish; hindwing white; both wings glossy.

#### Male genitalia

Uncus of medium length, slightly tapering caudad, deeply bifurcate from about three-fourth from base. No hairs present. Gnathos bent dorsad just before middle. Tegumen tapering ventrad. Valva with basal-dorsal area distinctly bordered. Costa lacks hair, arched ventrad before apex. The latter with an extending dorsad, rounded projection. Ventral margin bowed, simple. Pseudosaccus fully developed. Vinculum decidedly shorter than valva, slightly tapering caphalad. Aedeagus slender, equal to length of total armature, evenly wide nearly throughout. No cornuti present.

### Female genitalia

Labia with caudal margins distinctly concave. Posterior apophyses decidedly dilated in basal half. Genital plate proportionately narrow; anterior apophyses short, distant from the dorsal margin of the plate. Ostium pouch much extending beyond the genital plate; terminal portion rounded, concave, moderately sclerotized; proximal portion lightly sclerotized, bulbous. Ductus bursae short. Bursa copulatrix much elongate, tapering gradually to the ductus. No signum present.

### Comments

The species was described from Ceylon. Several specimens from Kandy, Galboda, Labugama, Calcutta, Mean Meer and Kulu are before me. CARADJA and MEYRICK quoted *C. melanosticta* (HMPS.) from Kwangtung (Southern China) (1933: 140). Unfortunately I have not found the mentioned specimen in the CARADJA collection. Because of the double frenulum of the female and the anterior apophyses distant from dorsal edge of genital plate the species under consideration is a rather atypical member of the genus. Together with the preceding species, *C. argenticilia* (HMPS.), they form a distinct group among *Calamotropha* ZELL. Perhaps a separate genus should be erected for these species. I designate as the lectotype the male labelled: „Type“, from Ceylon.

### Material examined

Lectotype — male: „Ceylon, GREEN Coll., 91—29“, GS-5607/B. M./BL., coll. Brit. Mus. (N. H.); 21 males and females (including lectotypoids) from Ceylon, Galboda, Labugama, Calcutta, Mean Meer, Assam, coll. Brit. Mus. (N. H.); one female from Kulu, GS-1627/BL., author's coll.

### *Calamotropha punctivenella* (HAMPSON), comb. n.

[Pl. XXVII, Fig. 32, Pl. LI, Fig. 132, Pl. LXII, Fig. 184]

1896. *Crambus punctivenellus* HAMPSON, Proc. Zool. Soc. Lond. 1895: 934 (sp. n.).

1896. *Crambus punctivenellus* HAMPSON, Fauna Brit. India p. 14.

Ocelli totally atrophied. Antenna glossy brownish, of the male serrate, of the female flatly serrate. Labial palpi three and one half times the length of the diameter of the eye; light brown, apical segment white at side above. Maxillary palpi brown on proximal half and white on distal half. Face nearly not protruding forward beyond the eye, broadly rounded, white rather glossy. Vertex concolorous. Patagia white with a yellowish spot at either side, in some instances dirty yellowish over all. Thorax and tegulae white to dirty yellowish.  $R_1$  in forewing coincident with *sc*. Frenulum of the female triple. Length of the forewing 7,5 to 9,5 mm, maximal width 2,8 to 3,4 mm. Costa slightly arched; apex decidedly acuminate; termen straight and fairly oblique.

que. Ground colour glossy white densely suffused with brown scales. Discal dot absent. Medial dot well defined, dark brown, situated just in the wing centre. Subterminal fascia a brown narrow double line; it is oblique terminad from costa, then running very near termen, minutely sinuate; with a slight indentation above the dorsum. The fascia is followed on costa by a concolorous triangular spot. Apical area white. A slightly visible trace of the medial fascia is present; it is well defined on costa, followed by a concolorous oblique streak. Termen distinctly bordered with brown. Fringes decidedly glossy, creamy white with yellowish basal stripe. Hindwing glossy whitish, in some instances slightly tinged with greyish; termen bordered with darker; fringes glossy, concolorous with the ground colour. Under surface unicolorous glossy, forewing brown with fringes paler; hindwing dirty whitish, darkened on the costal area; fringes white.

#### Male genitalia

Uncus slender, very slightly curved ventrad, with apex spine-shaped; a few long hairs at the base present. Gnathos of a paculiar shape, it is strongly bulbous ventrally, apical portion nearly straight, rather thin with tip rounded. Tegumen markedly triangularly projected ventrally with margins broadly thickened. Valva undivided. Costa lack hair, concave medially. Apex heavily sclerotized, produced to a long spine dorsally; ventral angle rounded; several moderate hairs medially. Ventral margin poorly hairy, inbent in three-quarters from base. Inner surface of the valva rather poorly hairy along a fold running from proximal-dorsal angle obliquely to ventral margin. Pseudosaccus well developed, rather pointed apically. Vinculum broad basally, then markedly narrowed, about twice shorter than the valva. Aedeagus simple, decidedly shorter than the total armature, nearly straight. No cornuti present in vesica.

#### Female genitalia

Labia with caudal margins very slightly concave, posterior apophyses thin throughout. Genital plate normal, wide with anterior apophyses thin. Ostium pouch rather lightly sclerotized, broad, flatly broadly notched ventrally. Ductus bursae as long as bursa copulatrix, narrow, lightly sclerotized, simple. Bursa copulatrix decidedly elongate, scobinate; no signum present.

#### Comments

This species was described from male examples coming from Ceylon and Tonkin. There is a male from Ceylon labelled „Type“ in the types-collection at the British Museum (N. H.). However, HAMPSON in his original description of this species did not designate the holo type. Consequently the lectotype should be designated. I designate as the lectotype the male labelled „*Crambus*

*punctivenellus* type ♂ HAMPSON, Ceylon 95—37". This species is rather atypical of *Calamotropha* ZELL. as the absence of the discal dot and coincidence of  $r_1$  and  $sc$  in the forewing shows. However, other features are of *Calamotropha* ZELL. As far I know the species ranges from Ceylon and India to Tonkin and Borneo.

#### Material examined

Lectotype — male, labelled as mentioned above, GS-5596/B. M./BL., coll. Brit. Mus. (N. H.); eleven males and females from Ceylon, Colombo, Galboda, Nipituya, coll. Brit. Mus. (N. H.); three females from Khasis Hills, Assam, coll. Brit. Mus. (N. H.) and author's coll., one male from Tonkin, coll. Brit. Mus. (N. H.); one male from Pontianak, W. Borneo, coll. Brit. Mus. (N. H.).

#### *Calamotropha neurigrammalis* (HAMPSON), comb. n.

[Pl. XXXI, Fig. 45, Pl. LIII, Fig. 142, Pl. LXVI, Fig. 203]

1912. *Crambus neurigrammalis* HAMPSON, J. Bomb. Nat. Hist. Soc. 21: 1249, pl. G. f. 31 (sp. n.).

Ocelli absent. Antenna uniformly brown of a basic *Calamotropha*-shape. Labial palpi three times the length of the diameter of the eye; pale brownish except for the apical joint, which is whitish. Maxillary palpi brownish on the basal half and whitish on the distal half. Face slightly protruding forward beyond the eye, white with a yellowish hue. Vertex white. Patagia brown on sides and white centrally. Thorax whitish with a narrow, longitudinal, brown, medial streak. Tegulae brownish.  $R_1$  in the forewing free. Frenulum of the female triple. Length of the forewing 7—8,5 mm, maximal width average 2,4 mm. Costa nearly straight, apex acute, termen nearly vertical to costa. Ground colour glossy dark brown with pattern white. A white, longitudinal stripe from base extending to the subterminal fascia, thence forked. Discal dot dark, very well defined, situated on the stripe. Dorsal area whitened. Subterminal fascia a distinct, narrow line; it is white, on either side edged with brown. A white triangle in the apical area. Termen edged with dark brown. Fringes glossy white, darkened at their ends. Hindwing glossy white with fringes concolorous and termen markedly bordered with brown below apex. Under surface: Forewing glossy, uniformly light brown; hindwing glossy whitish.

#### Male genitalia

Uncus very short, tapering, narrowly rounded apically; basal long hairs present. Gnathos very long and slender, gradually tapering caudad. Valva undivided, rather narrow, tapering. Hairs scattered over the terminal and ventral area. Saccus proportionately long and slender. Vinculum somewhat shorter than the valva, tapering cephalad. Aedeagus slender, nearly evenly wide throughout, armed with a terminal heavily sclerotized pecten; five rather small, slightly curved, tapering cornuti in vesica present.

### Female genitalia

Labia with caudal margins rather straight; posterior apophyses slender, dilated only at the very bases. Genital plate narrow dorsally; anterior apophyses proportionately short, situated midway to ostium pouch. The latter heavily sclerotized except in the proximal portion; tapering to a point caudad; margins list-like thickened. Ductus bursae lightly sclerotized, swollen just before the bursa. The latter decidedly elongate, with caudal portion scobinate. No signum present.

### Comments

The species is as yet known only from Ceylon. It is a typical member of the genus, as the facies and the armature of the genitalia of both sexes shows. In the types-collection at the British Museum (N. H.) in London are two specimens of the species under consideration with the type-labels. HAMPSON in his original description of *C. neurigrammalis* (HMPS.) did not designate the holotype. I designate as the lectotype the male labelled „Ceylon Ambalangoda, III, Pole, 1904—44“, „Type“, „*Crambus neurigrammalis* type ♂ HAMPSON“, GS-5588 /B. M./ BL.

### Material examined

Lectotype — male, labelled as is mentioned above; one female lectotypoid and seven other females from Ceylon, GS-5590/B. M./BL., GS-1373/BL., coll. British Museum (N. H.), one female in author's coll.

### *Calamotropha latella* (SNELLEN), comb. n.

[Pl. XXVIII, Fig. 33, 34, Pl. L, Fig. 128, Pl. LX, Fig. 173]

1890. *Crambus latellus* SNELLEN, Trans. Ent. Soc. Lond. 1890: 644 (sp. n.).  
 1896. *Crambus latellus*, HAMPSON, Proc. Zool. Soc. Lond. 1895: 937 (in part).  
 1901. *Crambus latellus*, SOUTH, Trans. Ent. Soc. Lond. 1901: 394 (in part).

Ocelli rather well developed. Antenna glossy whitish of a basic *Calamotropha*-shape. Labial palpi nearly three times the length of the diameter of the eye; basal and mid joint yellow; apical joint white, mixed broadly with grey in the middle. Maxillary palpi yellow basally, then white. Face rather decidedly produced forward, broadly rounded; white. Vertex concolorous. Patagia white with a yellow spot on either side. Thorax and tegulae glossy show-white.  $R_1$  in the forewing coincident with *Cu*. Frenulum of the female triple. Length of forewing 9,5—11,5 mm., maximal width 3,8—5 mm. Females are usually larger than males. Costa nearly straight, apex acute, termen slightly oblique, gently bowed. Ground colour almost dull, snow-white. Medial dot is a contrasted, black, short, oblique streak just before the centre of the

wing. Subterminal fascia is a nearly invisible, yellow line, obliquely from costa then running very near termen, gently sinuate. In the costal portion the fascia is followed by a rather distinct, parallel, yellow streak and a distinct concolorous spot lying in the apical area. A distinct yellow spot at the termen above the anal angle, containing two black terminal dots. Fringes markedly glossy yellowish. Hindwing glossy dirty whitish with fringes concolorous. Under surface: Forewing glossy brown except for the outer area, which is decidedly broadly lightened with creamy-yellowish, and the costa narrowly so coloured; terminal dots distinct; hindwing rather concolorous with the upperside.

#### Male genitalia

Uncus more than twice shorter than gnathos, rather markedly bowed ventrad, gently gradually tapering caudad, apex narrowly rounded; several long hairs at base present. Gnathos very long, angulated beyond base, further on decidedly bowed ventrad; apex narrowly rounded; dorsal margin minutely toothed over the medial portion. Tegumen decidedly tapering ventrad. Valva undivided, markedly elongate, heavily sclerotized throughout. Costa bowed. Apex broadly rounded, rather narrower than the medial and basal part of valva; ventral edge fairly straight. Pseudo saccus well developed, narrow. Vinculum half the length of valva, tapering cephalad, with apex truncate. Aedeagus equal to length of the total armature, very slender, gently bowed ventrad; terminal part thickened on either side; one moderate, thin, tapering cornutus in the middle and one or two shorter but wider, tapering cornuti towards the apex present.

#### Female genitalia

Labia with caudal margins slightly concave; posterior apophyses strongly triangularly dilated in basal half. Genital plate with dorsal margin rather short; anterior apophyses short. Ostium pouch and ductus bursae to near bursa copulatrix a heavily sclerotized funnel. It is obliquely truncate caudally, with a longitudinal long fold medially; looped cephalad; ductus bursae beyond the loop is lightly sclerotized. Bursa copulatrix rather ovate, no signum present.

#### Comments

The lectotype (female) of this species from Darjeeling, India, is in the collection of the Rijksmuseum van Natuurlijke Historie, Leiden. This specimen lacks the abdomen. Other syntypes in the ELWES collection are lost (MUNROE c. s., 1958: 78). As far I know the species is distributed in India (Himalayas, Assam, Khasis, Dharmasala) and Upper Burma. HAMPSON (1896: 937) cites *C. latella* (SNELL) from Japan, however, this record is apparently a misidentification of one of the subsequent species. SOUTH (1901: 394) sank

*C. nigripunctella* (LEECH) under *C. latella* (SNELL.). This author was, however, in error as the two are obviously distinct species.

The data of CARADJA (1928: 298, 1931: 2) and of CARADJA and MEYRICK (1935:23) on the occurrence of *C. latella* SNELL. in China (Shanghai, Mokanshan, Lungtan) are misidentifications of *C. sienkiewiczi* sp. n. This is surprising as both *C. latella* SNELL. and *C. sienkiewiczi* sp. n. are very distinct and collection of CARADJA includes some specimens of the former species.

Because of the presence of the ocelli and the run of the  $R_1$  in the forewing, *C. latella* (SNELL.) and subsequent *C. nigripunctella* (LEECH) and *C. brevilinella* (SOUTH) are rather atypical members of the genus. However, the triple frenulum of the females, as well as the armature of the genitalia in both sexes places these species in *Calamotropha* ZELL. These form a very close group being, however, very easy to distinguish on the facies and the armature of the genitalia of both sexes. *C. nigripunctella* (LEECH) and *C. brevilinella* (SOUTH) have the yellow spot at the termen of the forewing very slightly defined, or completely reduced; *C. nigripunctella* (SOUTH) has the face not protruding forward beyond the eye; the medial streak in *C. brevilinella* (SOUTH) is much more elongate and narrower than in the species under consideration. The differences in the genitalia are as shown in the figures. *C. brevistrigella* (CAR.) is somewhat similar to *C. latella* (SNELL.), however, it is decidedly smaller, the medial streak is less oblique and the ocelli are very small or vestigial.

#### Material examined

Nine males and females from Khasis, GS-687/BL., GS-688/BL., GS-991/BL., one male from Dharmasala; one female from Cherra Punji; one male from Assam, GS-926/BL., one female from Upper Burma, Kangtang — coll. Brit. Mus. (N. H.), coll. Mus. Gr. Ant., and author's coll.

#### *Calamotropha brevilinella* (SOUTH), comb. n.

[Pl. XXVIII, Fig. 35, Pl. XLIX, Fig. 122, Pl. LX, Fig. 175—177]

1901. *Crambus brevilinellus* SOUTH, Trans. Ent. Soc. Lond. 1901: 394, pl. XIV, f. 3 (sp. n.).

Ocelli fully developed. Antenna uniformly glossy pale brownish-greyish; of a basic *Calamotropha*-shape. Labial palpi three times the length of the diameter of the eye; basal and mid joint yellow, the latter faintly mixed with dark grey on apex; apical joint white with terminal portion broadly mixed with dark grey, the very apex being but white. Maxillary palpi yellow on base, further on white. Face rather markedly protruding forward beyond the eye, broadly rounded, white. Vertex concolorous, but a yellow tuft at the margin of either eye is present. Patagia white mixed with yellow at either side. Thorax and tegulae white.  $R_1$  in the fore wing coincident with *Sc*. Frenulum of the female triple. Length of forewing 10—12 mm., maximal width 4—5 mm. The male is somewhat smaller than female. The shape of the wings

is rather similar to that in the preceding species. Medial streak black, decidedly narrower and longer than in *C. latella* (SNELL.); oblique in relation to costa. Subterminal fascia nearly totally reduced except for the costal pale yellow, oblique streak, which is followed by another, concolorous streak, and a spot lying in the apical area. The yellow patch at the termen above dorsum absent. Three black terminal dots above dorsum. Fringes strongly shiny, uniformly yellowish, somewhat paler than in the preceding species. Hindwing of a similar colour as in *C. latella* (SNELL.). The pale yellowish outer area of the forewing in the underside paler than in *C. latella* (SNELL.), otherwise underside rather similar as in that species.

#### Male genitalia

Uncus decidedly shorter than gnathos, bowed ventrad, tapering caudad; apex pointed with a small additional tooth; the very tip minutely bifurcate, base provided with several long hairs. Gnathos with base angled; terminal portion bowed ventrad, slightly projected dorsally; apex slightly acuminate. Tegumen slightly tapering ventrad. Valva undivided, rather heavily sclerotized throughout. Costa gently bowed; apical margin rather obliquely truncate, very feebly sinuate, with a sharp small tooth on dorsal angle; a larger, bifurcate into two teeth, oblique cephalad projection beyond the terminal tooth. Ventral edge slightly arched. Pseudosaccus large. Vinculum half length of the valva, narrowed proximally, with apex truncate. Aedeagus half the length of the total armature; basal portion decidedly bent, further on slightly gradually tapering to a point; terminal portion surrounded by a bulbous membrane. A single small cornutus midway from base is present.

#### Female genitalia

Labia with caudal margins slightly concave. Posterior apophyses more or less decidedly dilated in basal portion; basal thickenings of labia distinct. Genital plate broad, forms an additional bag well visible in dorsal view. Anterior apophyses in the holotype lacking and very short in the two other examined females; it is linked to ostium pouch with a heavily sclerotized bridge. Ostium pouch heavily sclerotized, rather evenly wide throughout in the type, but rather decidedly bulbous proximally in the two other females. Ductus bursae very faintly longitudinally ribbed beyond the ostium pouch in the lectotype. That ribbing absent in other females. Bursa copulatrix elongate, minutely scobinate; no signum present.

#### Comments

The species was described from three females. The female from Omei-shan (China) is designated as the lectotype. Two other lectotypoids come from Chang-Yang. Additionally, one female from Ta-Tsien-Lu and one male labelled

„China“ are identified as belonging to the species under consideration. — The species appears to be somewhat variable. The median streak in the only examined male is rather dilated at inner portion, being evenly wide throughout in the three other examined females. The commence of this streak lies just in the wing middle or just below it. I am unable to solve definitely the problem of *C. brevilinella* (SOUTH) as to little material is available for study. Perhaps the subsequently described *C. josettae* sp. n. is only an aberrant form of the species under consideration; it is described from three males in which the median streak in the forewing is parallel to costa and the apical portion of the aedeagus is decidedly thinner than in *C. brevilinella* (SOUTH). However, it is quite impossible to state whether the only male of *C. brevilinella* (SOUTH) is correctly associated with the females considered here.

#### Material examined

Lectotype — female: „Omei-Shan. 3500 ft. Native coll. VI & VII. 1890“, „LEECH Coll. 1900—64“, GS-5611/B. M./BL., coll. Brit. Mus. (N. H.); one female lectotypoid „Chang-Yang. A. E. P. Pratt. coll. VI. 1888“, GS-543/BL., coll. Brit. Mus. (N. H.); one female: „Ta-tsien-lu, W. China“, GS-963/BL., coll. Brit. Mus. (N. H.); one male: „China“, GS-2262/BL., author's coll.

#### *Calamotropha josettae* sp. n. ♂

[Pl. XXIX, Fig. 37, Pl. XLIX, Fig. 124]

1932. *Crambus brevilinellus*, CARADJA (nec SOUTH), Bull. Sect. Sient. Acad. Roum. **14** (7/8): 7.

Ocelli fully developed.  $R_1$  in forewing coincident with  $Sc$ . Length of forewing 10 mm., maximal width 4,5 mm. Antennae, palpi, head, thorax and patagia similar as in preceding species. Ground colour of forewing snow-white. Sub-terminal fascia ill-defined. Yellow patch on costa before apex rather well developed. Yellow patch at termen above anal angle ill-defined. One marginal dot distinct and the other slightly visible. Fringes markedly glossy, uniformly yellowish-creamy. Medial streak very long, quite parallel to costa. Under surface much like that in preceding species.

#### Male genitalia

Uncus rather similar to that in *C. brevilinella* (SOUTH), however, with tip more distinctly bifurcate. Terminal portion of gnathos long, slightly dilated apically. Valva similar to that in the preceding species, differing in the dentation of the apical part of costa (as is shown in the figures). However, too little material is available for study to consider this character to be of specific significance. Pseudosaccus somewhat smaller than in *C. brevilinella* (SOUTH). Vinculum as in *C. brevilinella* (SOUTH). Aedeagus longer with apical portion strongly narrowed and with tip decidedly pointed and rather curved ventrad; apical portion surrounded by a bulbose membrane. Vesica armed with one or two small, tapering cornuti.

### Comments

This new species is described from three male specimens from Omei-shan and Pehlingting, China. One of these was published as belonging to *C. brevilinella* (SOUTH) (CARADJA, 1932: 7). The new species is very close to, but rather distinct from *C. brevilinella* (SOUTH). In the latter the medial streak in the forewing runs distinctly obliquely to costa, being parallel to costa in the former. Other differences are in the male genitalia: Uncus in *C. josettae* sp. n. is distinctly bifurcate, being hardly bifurcate in *C. brevilinella* (SOUTH). Aedeagus is shorter in the latter than in the former. However, I do not exclude that the above three males are only aberrant examples of the preceding species.

The new species is named in honour of Mrs. Josette Bonnet of Rouen.

### Material examined

Holotype — male: „Mt. Omei China. F. 7000. VII. [19]31“, GS-1901/BL.; one male typoid: „Pehlingting, China. F. 6000. VII. [19]32“, GS-1902/BL., both in coll. Brit. Mus. (N. H.); one male typoid: „Omei. 27. VII. [19]31. 7000 ft. T.“, GS-1795/BL., coll. Muz. Gr. Ant. Bucarest.

### *Calamotropha nigripunctella* (LEECH)

[Pl. XXVIII, Fig. 36, Pl. XLIX, Fig. 121, 123, Pl. LX, Fig. 174]

1889. *Crambus nigripunctellus* LEECH, Ent. 22: 107, pl. V, f. 10 (sp. n.).  
 1896. *Crambus nigripunctellus*, HAMPSON, Proc. Zool. Soc. Lond. 1895: 937.  
 1901. *Crambus latellus*, SOUTH (nec SNELLEN), Trans. Ent. Soc. Lond. 1901: 394 (in part).  
 1928. *Crambus nigripunctellus*, SHIBUYA, J. Fac. Agr. Hokk. Imp. Univ. 21: 135, pl. II, f. 14.  
 1931. *Crambus brevilinellus*, CARADJA (nec SOUTH), Bull. Acad. Roum. 14 (9/10): 2.  
 1932. *Crambus brevistrigellus* CARADJA, Bull. Acad. Roum. 15: 117. (sp. n.) (in part).  
 1935. *Crambus hönei* CARADJA & MEYRICK, Mat. Microlep. Fauna chin. Prov. Kiangsu, Chekiang und Hunan p. 23 (sp. n.). **Syn. n.**  
 1959. *Calamotropha flaviguttella*, INOUE (nec WILEMAN & SOUTH), Icon. Ins. Jap. 1: 234, pl. 165, f. 36.

Ocelli well developed. Antenna whitish, of a basic shape of *Calamotropha* ZELL. Labial palpi rather similar to those in the two preceding species. Maxillary palpi yellow on base, further on white. Face very slightly protruding forward beyond the eye; nearly flat; white. Vertex, patagia, thorax and tegulae white; patagia with an indistinct yellow patch on either side.  $R_1$  in the forewing coincident with *Sc*. Frenulum of the female triple. The shape of the forewing rather similar as in preceding species except for the apical portion of the costa, which is rather curved. Ground colour as in *C. brevilinella* (SOUTH). Medial streak somewhat longer than in *C. latella* (SNELL.), but decidedly shorter and broader than in *C. brevilinella* (SOUTH). Subterminal fascia a rather well defined, narrow, brownish line; it is obliquely straight on costa, then broadly excurved, running very near the termen, slightly sinuate above dorsum; costal portion followed by a rather parallel yellow streak and a concolorous spot

lying in the apical area. The yellow spot at termen rather indistinct. Three terminal dots. Fringes strongly shiny, golden-yellowish. Hindwing slightly glossy, dirty whitish, with narrowly shaded termen and fringes rather glossy whitish. Under surface: Forewing nearly dull brown, whitened on the outer area; hindwing rather concolorous with the upperside.

#### Male genitalia

Uncus rather bowed ventrad, shorter than in *C. brevilinella* (SOUTH); apex rounded; base with several long hairs. Gnathos rather similar to that in the preceding species, except for the terminal portion, which is a trifle longer. Tegumen normal. Valva rather resembling that in *C. brevilinella* (SOUTH), however, costa is markedly bowed at base, then list-like thickened, terminated by a distinct, dentate projection of a different shape than in *C. brevilinella* (SOUTH); ventral margin straight; a rib from base to near the anal-dorsal angle, with terminal portion minutely dentate dorsally; inner surface of valva clothed with scattered, stout, curved spines. Pseudosaccus well developed. Vinculum with dorsal margin decidedly concave; apical portion tapering, tip narrowly rounded. Aedeagus a trifle shorter than the total armature, slightly bent before the middle, nearly evenly wide throughout. Vesica armed with a row of moderate, tapering cornuti.

#### Female genitalia

Labia with caudal margins rather straight; posterior apophyses slightly dilated medially with bases not dilated. Genital palate rather broad; anterior apophyses are very short projections; a rather heavily sclerotized ring beyond ostium pouch. The latter rather lightly sclerotized, folded, short, broader than ductus bursae. The latter heavily sclerotized and longitudinally wrinkled to near the bursa copulatrix, looped beyond the middle. Bursa copulatrix slightly elongate; no signum present.

#### Comments

This species was described from an example of each sex from Ningpo and one male from Gensan, China. I designate the male from Ningpo as the lectotype (label see below). I have not found the male from Gensan in the collection of the British Museum (N. H.). This perhaps belongs to the preceding species. SHIBUYA (1928b: 135) quoted the species in question from Hakodate, Honshu Japan, also from Corea and China. The last two records might be misidentifications of the similar *C. brevilinella* (SOUTH). However, the latter is easily separable from *C. nigripunctella* (LEECH) by its markedly longer median streak in the forewing. The two are perfectly distinct on the genitalia of both sexes as is shown in the figures.

The specimen published by CARADJA (1931: 2) as „*Crambus brevilinellus* SOUTH“, and then (1932: 117) described by him as the male of *Crambus brevistrigellus* CAR., is an aberrant example of the species under consideration. This is a male distinctly smaller than the typical specimens of *C. nigripunctella* (LEECH) and cornuti in its aedeagus are rather smaller. Perhaps this specimen belongs to a local race or even to a distinct species. At the moment I am unable to solve this question as to little material is available for study. The figure of the genitalia of the mentioned male is shown on the plate.

The study of three syntypes of *Crambus hönei* CAR. & MEYR. has shown that this species is obviously identic with *C. nigripunctella* (LEECH). Consequently I sink the former under synonyms of the latter. *Crambus hönei* CAR. & MEYR. was described from two males and one female from West Tien-mushan, China. The colour, pattern and the armature of the male genitalia of these are strikingly similar to those in the specimens of *C. nigripunctella* (LEECH) coming from Japan. Unfortunately the female-syntype of *Crambus hönei* CAR. & MYER. lacks the abdomen. I designate as the lectotype of *Crambus hönei* CAR. & MEYR. the male bearing the label: „22 July 1932“.

The figure of *C. nigripunctella* LEECH in *Iconographia Insectorum Japonicorum* (1959) is an apparent misidentification of *C. brevistrigella* CAR. My opinion has recently been confirmed as Mr. M. OKANO of Morioka has kindly sent me a sketch of the genitalia of the male figured in *Iconographia...* The genitalia of that male agree perfectly with those in the lectotype of *C. brevistrigella* (CAR.). The species under consideration is figured under the name *Calamotropha flaviguttella* (WIL. & SOUTH), this is very surprising, as *C. purella* (LEECH) [*C. flaviguttella* (WIL. & SOUTH) is a synonym of *C. purella* (LEECH)] is strikingly distinct from the species in question as shown by the absence of the black medial streak and the complete absence of the ocelli.

The figure of LEECH in his original description is incorrect as having a complete medial fascia, a character not present in *C. nigripunctella* (LEECH). This figure resembles somewhat *C. sienkiewiczi* sp. n. Possibly it was made from the specimen from Gensan, which perhaps belongs to *C. sienkiewiczi* sp. n. Unfortunately it is impossible to solve definitely this problem as the male from Gensan is lacking in the collection of the British Museum (N. H.).

#### Material examined

Lectotype of *Crambus nigripunctellus* LEECH; male: „Ningpo. 1886. Native coll.“, „LEECH Coll. 1900—64“, „Type“, GS-5603/B. M./BL., one female lectotypoid labelled as the lectotype, GS-5604/B. M./BL., both in coll. Brit. Mus. (N. H.); male syntype of *Crambus brevistrigellus* CAR.: „Kwanhsien. 9. VIII. 1928, leg. FRANCK“, GS-1744/BL., coll. Muz. Gr. Ant.; lectotype of *Crambus hönei* CAR. & MEYR., male: „22. VII. 1932“, GS-17 45 /BL., one male lectotypoid and one female lectotypoid of *Crambus hönei* CAR. & MEYR., male: „20. VII. 1932“, GS-17 46 /BL., female: „24. VII. 1932“, all three specimens in coll. Muz. Gr. Ant.; one female from Japan, coll. Brit. Mus. (N. H.); one female from Shihoku, Japan, GS-536/BL., coll. H. INOUE, Fujisawa, Japan.

*Calamotropha brevistrigella* (CARADJA), comb. n.

[Pl. XXVII, Fig. 29, Pl. L, Fig. 126]

1925. *Crambus brevilinellus*, CARADJA (nec SOUTH), Mem. Sect. Științ. Acad. Rom. (3) 3: 297.  
 1932. *Crambus brevistrigellus* CARADJA, Bull. Acad. Roum. 15: 117 (sp. n.) (in part).  
 1959. *Calamotropha nigripunctella*, INOUE (nec LEECH), Icon. Ins. Jap. 1: 234, pl. 165, f. 35.

Male. Ocelli very small and light, or nearly totally atrophied. Antennae uniformly white, serrate. Labial palpi more than twice the length of the diameter of the eye, white; mid segment brown from above, apical segment with a wide, dark brown ringe. Maxillary palpi brown basally, further on white. Face slightly protruding forward beyond the eye, broadly rounded, white. Vertex concolorous. Patagia yellow at sides and white centrally. Thorax and tegulae white.  $R_1$  in the forewing runs freely. Length 7 mm., maximal width 3 mm. Ground colour rather dull, snow-white. Subterminal fascia barely visible, a slight yellow line, it is followed on costa by an oblique streak and a brown-ochreous spot lying just before apex; the fascia is broadly excurved, then obliquely straight on dorsum. Medial fascia traceable, below costa angled, then twice sharply outangled. Medial dot a large, dark, short streak. A few terminal dots above dorsum. Fringes strongly shiny brown-golden, whitened at their very bases. Hindwing glossy white, termen slightly bordered with darker below apex; fringes concolorous with the ground colour. Under surface: Forewing glossy brownish, broadly whitened on dorsum; a trace of subterminal fascia from costa to one-third of wing width; terminal dots well defined; hindwing glossy white with costa tinged with yellowish; a few dots at apex; fringes concolorous with the ground colour.

## Male genitalia

Uncus markedly bowed ventrad, tapering to a point; several moderate hairs medially. Gnathos nearly as long as uncus, slender, with terminal portion curved dorsad. Tegumen rather tapering ventrad. Valva undivided, decidedly tapering caudad, heavily sclerotized on its total surface; hairs moderate, scattered over the total surface. Costa rather concave; apex slightly bifurcate; the dorsal point is longer than the ventral one. Ventral margin faintly bowed dorsad. Pseudosaccus large. Vinculum decidedly elongate, tapering cephalad, with tip narrowly rounded. Aedeagus slender, rather evenly wide throughout, decidedly shorter than the total armature; vesica armed with two rows of moderate, tapering cornuti. The female of this species is as yet unknown.

## Comments

The species is rather similar to the three preceding members of *Calamotropha* ZELL., however, it is very distinct by reason of the strong reduction of ocelli and small size, as well as by the armature of the genitalia. It was

described from two male examples, not one male and one female as stated in the original description, one from Kwanhsien and the other from Lienping (in original description given incorrectly Linping). The male from Kwanhsien belongs to *C. nigripunctella* LEECH [for details see *C. nigripunctella* (LEECH) — comments]. I designate as the lectotype of *Crambus brevistrigellus* CAR. the male labelled „Lienping. VII“. Besides the lectotype several males from the CARADJA collection from China have been examined.

The figure given for *Calamotropha nigripunctella* (LEECH) in *Iconographia Insectorum Japonicorum* is a misidentification of the species under consideration, as mentioned in the comments for the preceding species.

#### Material examined

Lectotype — male: „Lienping“. VII“; one male from Lienping, 7. IX.; two males from Lungtan, VI. 1933; one male from Hoeng-Shan (900 m.), Prov. Hunan, 24. IV. 1933; one male from China, GS-900/BŁ., all in coll. Muz. Gr. Ant., Bucarest.

#### *Calamotropha sienkiewiczi* sp. n.

[Pl. XXIX, Fig. 39, Pl. L, Fig. 125, Pl. LVIII, Fig. 166]

1925. *Crambus latellus*, CARADJA (nec SNELLEN), Mem. Sect. Științ. Acad. Rom. (3) 3: 298.  
 1931. *Crambus latellus*, CARADJA (nec SNELLEN), Bull. Sect. Sient. Acad. Roum. 14 (9/10): 2.  
 1935. *Crambus latellus*, CARADJA & MEYRICK (nec SNELLEN), Mat. Microlep.-Fauna chin. Prov. Kiangsu, Chekiang und Hunan p. 23.

Ocelli very small, nearly completely atrophied. Antennae uniformly brown-yellowish, of a basic *Calamotropha*-shape. Labial palpi three times the length of the diameter of the eye; basal joint brown-rusty; mid joint creamy-yellowish with a brown ring in apical portion; apical joint creamy-yellowish on basal half and brown on apical half. Face not protruding forward beyond the eye, broadly rounded, white; vertex concolorous. Patagia snow-white with a yellow stripe on either side. Tegulae show-white. Thorax white, tinged yellowish centrally. Frenulum of the female triple.  $R_1$  in the forewing free. Length of forewing 9,5—11,5 mm., maximal width 4—5 mm. Costa barely arcuate, apex rather rounded, termen slightly oblique, rather distinctly curved. Ground colour very slightly glossy snow-white. Subterminal fascia is a distinct, narrow line; ochreous-yellow on costa, further on brown; broadly excurved; projected basad above dorsum. Medial fascia concolorous with subterminal fascia, distinct; triangularly projected just below the wing middle; the tip of projection marked by a small patch of ochreous-brown scales. Discal dot absent. An ochreous patch on costa just before apex. Three black terminal dots above dorsum. Termen very faintly bordered yellow-ochreous. Fringes whitish-steely, decidedly metallically glossy, darkened above dorsum. Hindwing glossy white with termen narrowly bordered with dark grey; fringes concolorous with the ground. Under surface: Forewing brown-grey with costal and apical area whitish; terminal dots distinct; hindwing rather concolorous with the upperside.

### Male genitalia

Uncus much shorter than gnathos, slightly curved ventrad with apex slightly dilated; typical basal hairs are present. Tegumen strongly tapering ventrad. Valva undivided, elongate, with caudal margin sinuate. Costa heavily sclerotized, lacks hairs. A slight fold near terminal margin, provided with a tiny tooth. A group of numerous, short bristles just beyond the middle of valva. A longitudinal, moderate fold near ventral margin. The latter straight. Hairs poor, rather short, scattered over the terminal-ventral and ventral portion of valva. Vinculum normal. Pseudosaccus well developed. Aedeagus slightly longer than the total armature, rather short, with apex in form of a heavily sclerotized, strong, finger-like process. Vesica armed with about 10 slender, tapering cornuti of various size.

### Female genitalia

Labia with caudal margins nearly straight; basal strengthenigs distinct. Dorsal margin of genital plate short; anterior apophyses short, narrow. Ostium pouch strongly and closely linked to genital plate; long, heavily sclerotized, tapering cephalad; terminal portion produced in two narrow processes; dorsal process curved, shorter than the ventral one; the latter dagger-like, pointed, short. Ductus bursae short, twice curved, lightly sclerotized; bursa copulatrix slightly elongate; no signum present.

### Comments

This species is described from a series of male and female examples from China. CARADJA in his papers published it erroneously as *Crambus latellus* SNELL. *C. sienkiewiczi* sp. n. is a typical member of the genus under consideration; it is very distinctive on its facies and genitalia in both sexes. Rather close to *C. latella* (SNELL.) — group, however, differing in having medial fascia and distinct subterminal fascia in forewing; ocelli very small, being rather well developed in the species of *C. latella* (SNELL.) — group. Male and female genitalia of the new species are perfectly distinct from all other species of *Calamotropha* ZELL. as is shown in the figures. The figure of *C. nigripunctella* (LEECH) in the LEECH original description of this species somewhat resembles *C. sienkiewiczi* sp. n. For more details in this matter see comments under *C. nigripunctella* (LEECH).

The new species is named in honour of Ing. I. SIENKIEWICZ of Bucarest.

### Material examined

Holotype — female: „Kwanshien, China, VII. 1930 (G. M. FRANCK)“, GS-1631/B<sub>L</sub>., coll. Brit. Mus. (N. H.); one female typoid labelled as lectotype, coll. Brit. Mus. (N. H.); one female typoid: „China: Kwanhsien. I. VIII. 1926, G. M. FRANCK“, GS-1317/B<sub>L</sub>., author's coll.; two female typoids: „Mokanshan, VI. 1918“, coll. Muz. Gr. Ant., Bucarest; two female typoids: „Lungtan bei Nanking, Prov. Kiangsu, China, 20. VI. [and] 11. VII. 1933, H. HÖNE“,

coll. Muz. Gr. Ant., Bucarest; one female typoid: „Shanghai“, coll. Muz. Gr. Ant., Bucarest; one male typoid: [China], „25. VII. 1932“, GS. 1685/B<sub>L</sub>., coll. Muz. Gr. Ant., Bucarest; one female typoid: [China], „20. VI. 1930“, coll. Muz. Gr. Ant., Bucarest; one female typoid: „2“, „*Crambus latellus* SNELL.“, coll. Muz. Gr. Ant., Bucarest; one female typoid: 15. VIII. 1932“, coll. Muz. Gr. Ant., Bucarest; one female typoid: 27. VII. 1932“, coll. Muz. Gr. Ant., Bucarest; one male typoid: „Lungtan bei Nanking, Prov. Kiangsu, China, 12. VII. 1933, H. HÖNE“, coll. Muz. Gr. Ant., Bucarest.

***Calamotropha sattleri* sp. n. ♂**

[Pl. XXIX, Fig. 40, Pl. L, Fig. 127]

Ocelli very small, concolorous with the adjacent area of the head.  $R_1$  in forewing free. Length of forewing 9,2 mm., maximal width 4,7 mm. Shape of forewing similar to that in preceding species. Colour and pattern strikingly similar to that in *C. sienkiewiczi* sp. n. Costal markings and the two fascias rather well defined.

**Male genitalia**

Uncus decidedly bowed with apex acuminate. Gnathos shows a resemblance to that in the preceding species, but with apical portion less bent. A distinct, triangular projection on tegumen just beyond the base of uncus. Valva with strongly developed pars basalis in form of a very long, bowed hook with apex pointed. Apical portion tapering, rather obliquely truncate, hairy. A sinuate fold runs near the ventral margin of the valva. Pseudosaccus large. Vinculum rather similar to that in the preceding species. Aedeagus rather straight, decidedly shorter than the total armature. Vesica with caudal portion armed with numerous tiny spikes.

**Comments**

This new species is described from a unique male specimen from Formosa. The species is indistinguishable on facies from *C. sienkiewiczi* sp. n., however, the two species are extraordinarily distinct on the male genitalia, which differ from each other in practically each detail. The female of this markable species is unknown.

The new species is named in honour of Dr. K. SATTLER of Zoologische Sammlung des Bayerischen Staates in München.

**Material examined**

Holotype male: „Hinokiyama, Formosa. VI. 30. 1935“, GS-1835/B<sub>L</sub>., coll. Zoolog. Sammlung Bayer. Staates, München.

***Calamotropha megalopunctata* sp. n. ♀**

[Pl. XXIX, Fig. 38]

Female. Ocelli fully developed. Antenna slightly serrate, uniformly dark brown, glossy. Labial palpi less than twice the length of the diameter of the eye; curved ventrad; ochreous with apex darkened. Maxillary palpi conco-

lorous with the labial palpi. Face broadly rounded, not protruding forward beyond the eye; ferruginous. Vertex concolorous. Patagia white, glossy, tinged with yellowish anteriorly. Tegulae and thorax glossy white with a dirty yellowish hue.  $R_1$  in the forewing free. Frenulum triple. Length of forewing 9,5 mm., maximal width 4 mm. Costa nearly straight; apex narrowly rounded; termen nearly straight, slightly oblique. Ground colour decidedly glossy, silvery white. A large, black, rather rounded median speck. Subterminal fascia reduced to a distinct costal, ferruginous, triangular spot and a small brownish speck on dorsum. An oblique, ferruginous streak running from costa just before the triangular spot. Terminal dots absent. Fringes yellow, ferruginous, unicolorous, slightly glossy. Hindwing rather dull whitish with uniformly yellowish fringes. Under surface: Forewing glossy brownish with outer area markedly yellowish; fringes concolorous with the adjacent area; hindwing rather glossy, concolorous with the upper surface.

#### Female genitalia

Labia with caudal margins about straight; anterior apophyses narrow throughout; genital plate rather normal with anterior apophyses proportionately short, markedly dilated in their basal portions and bifurcate apically. The latter characters has not hitherto been met with in any other species of the genus under consideration. Ostium pouch lightly sclerotized, bulbous. Ductus bursae narrow, lightly sclerotized. Bursa copulatrix elongate; no signum present.

#### Comments

This new species is described from a unique female example from Tambura, Southern Sudan. I place it in the *C. latella* (SNEL.)-group by reason of its facies and fully developed ocelli. However, *C. latella* (SNEL.) and allies have  $R_1$  in the forewing coincident with *Sc*, and the new species shows that vein free. *C. megalopunctata* sp. n. seems to be a very old relict species. All remaining species of *C. latella* (SNELL.) group occur in India, China and Japan.

#### Material examined

Holotype — female: „Tambura, Southern Bahr-el-Ghazal“, GS-956/BL., coll. Brit. Mus. (N. H.).

#### *Calamotropha megalopunctata minuta* ssp. n.

[Pl. LV, Fig. 147, Pl. LVIII, Fig. 167]

Differs from the typical form by much smaller size and coloration. Length of forewing 7—8 mm., maximal width 2,8—3,5 mm. Costal specks in the forewing black (in the female) or ochreous-brown (in the male). Dorsal speck black.

Female genitalia rather similar to those in the typical form.

## Male genitalia

Unfortunately the male genitalia of the unique male of this subspecies are partially destroyed. Uncus, gnathos and tegumen lack. Valva undivided, elongate, with apex triangularly tapered, heavily sclerotized. Costa straight, lacks hair. A large fold in the basal-ventral area. Pseudosaccus very large, tapering. Aedeagus barely shorter than the total armature, nearly straight, narrow. Vesica armed with a single, moderate cornutus.

## Comments

This subspecies is described from one male and one female specimen. They differ from each other on the colour of the costal specks, which are black in the female and rather ochreous-brown in the male. Perhaps the association of these specimens in one form is incorrect. Perhaps they belong to two distinct subspecies, or even species. Too little material is available for study to solve this question definitely. Possibly the typical form is also not conspecific with this subspecies.

## Examined material

Holotype — female: „Gold Coast: N. Territories. Kate-Krachi. A. W. CARDINALL. B. M. 1925—241“, GS-1552/B.L., coll. Brit. Mus. (N. H.); one male typoid: „Moyamba, S. Leone III. [19]03. D. Cator“, GS-1666/B.L., coll. Brit. Mus. (N. H.).

### *Calamotropha tonsalis* (WALKER), comb. n.

[Pl. XXXI, Fig. 47, 48, Pl. XLVIII, Fig. 119, Pl. LXII, Fig. 183]

1863. *Myzea tonsalis* WALKER, List. Spec. Lep. 27: 190 (sp. n.).

1896. *Crambus tonsalis*, HAMPSON, Proc. Zool. Soc. Lond. 1895: 926.

1919. *Crambus albidorsatus* HAMPSON, Ann. Mag. Nat. Hist. (9) 3: 280. **Syn. n.**

Ocelli absent. Antennae brown; of the male distinctly serrate and of the female rather flatly serrate. Labial palpi more than three times the length of the diameter of the eye; pale beige. Maxillary palpi brown on the basal half and pale beige creamy on the distal half. Face barely protruding forward beyond the eye, broadly rounded, pale beige. Patagia brown on sides and pale beige centrally. Thorax and tegulae brown. Forewing.  $R_1$  free. Frenulum of the female triple. Length 11—15 mm., maximal width 3,5—5 mm. Costa rather straight, apex sharply acute; termen straight, very gently oblique. Ground colour rather dull pale beige, on places darkened with ochreous brown. Discal dot well defined, another dark dot below. Subterminal fascia a row of dark specks, being but uniform on costa; sharply angled below costa, then obliquely straight to dorsum. Termen edged with a brown narrow shade that is, in some instances, broken into several dots. Fringes glossy yellowish brown. Hindwing slightly glossy, pale brown. A few well defined brown marginal

dots present. Fringes slightly glossy, of cream colour. Under surface: Forewing uniformly slightly glossy brownish with terminal dots distinct; hindwing rather concolorous with the upper surface.

#### Male genitalia

Uncus feebly arched, long, apex tapering to a small spine; basal long hairs present. Gnathos equal to length of uncus, slender, with apex rounded. Tegumen rather normal. Valva undivided, subtriangular, heavily sclerotized over the total surface. The base above markedly thickened. Costa concave basally, then rather arched. Apex obliquely truncate to a small triangular projection. Ventral margin bowed. Hairs dispersed over the apical and ventral apical portion. Pseudosaccus large, tapering cephalad. Vinculum broad subtrapezoidal, shorter than the valva. Aedeagus large, decidedly longer than the total armature; it is very gently arched, nearly evenly wide throughout; a single, arched, tapering to a sharply acute tip cornutus of two-sevenths the length of aedeagus.

#### Female genitalia

Labia with caudal margins rather concave; posterior apophyses markedly expanding basally. Genital plate broad, rather normal. Ostium pouch narrowly surrounded with the ventral part of genital plate; it is heavily sclerotized and minutely scobinate and bulbous distally; proximal portion partially moderately sclerotized, longitudinally ribbed. Ductus bursae narrow, very gently wrinkled, lightly sclerotized throughout. Bursa copulatrix elongate, scobinate over the total surface; no signum present.

#### Comments

*C. tonsalis* (WALK.) was the only species placed under the genus *Myzea* WALK. As is pointed out in the general part of this study, the genus *Myzea* WALK. falls into the synonyms of *Calamotropha* ZELL. The type of *C. tonsalis* (WALK.) comes from Sarawak, Borneo. It is a large measured female lacking the abdomen. Fortunately there is another female from Sarawak with a WALKER'S label. This is strikingly similar and obviously conspecific with the holotype. *Crambus albidosatus* HMPS. was described from a unique male specimen taken in Singapoore. This is apparently conspecific with the WALKER species and I sink it under the species in consideration. The species is very distinctive by the colour and genitalic characters, however, it represents a typical member of the genus.

#### Material examined

Holotype — female: „Sarawak SOUNDER'S coll. 94—68“, „*Myzea tonsalis*“, „SAR“, coll. Brit. Mus. (N. H.); one female from Sarawak labelled „SAR“, coll. Brit. Mus. (N. H.); holotype of *Crambus albidosatus* HMPS., male: „Singapore H. N. RIDLEY, 1909—194“, GS-5547/B. M./BL., coll. Brit. Mus. (N. H.); one female from Siberoet, Mentawai In. (near Sumatra), GS-1221/BL., author's coll.

*Calamotropha atkinsoni* (ZELLER)

[Pl. XXXII, Fig. 49, Pl. LI, Fig. 129, Pl. LXIII, Fig. 189]

1863. *Calamotropha atkinsoni* ZELLER, Chil. Cramb. Gen. Spec. p. 9 (sp. n.).  
 1880. *Calamotropha fuscicostella* SNELLEN, Tijd. Ent. 23: 247, pl. V, f. 8 (sp. n.). *Syn. n.*  
 1884. *Calamotropha fuscicostella* SNELLEN, Tijd. Ent. 27: 52.  
 1896. *Crambus atkinsoni*, HAMPSON, Proc. Zool. Soc. Lond. 1895: 926.  
 1896. *Crambus anticellus*, HAMPSON (nec WALKER), Proc. Zool. Soc. Lond. 1895: 926 (in part).  
 1896. *Calamotropha fuscicostella*, HAMPSON, Proc. Zool. Soc. Lond. 1895: 941.  
 1896. *Crambus atkinsoni*, HAMPSON, Fauna Brit. India p. 12.  
 1933. *Crambus holodryas* MEYRICK, 1933, Ext. Micr. 4: 444 (sp. n.).  
 1954. *Calamotropha atkinsoni*, MARTIN, Ent. 87: 117 (f. 1: ♂ genit.; f. 13: ♀ genit.).

Ocelli absent. Antenna of a basic *Calamotropha*-shape in both sexes; brown. Labial palpi more than twice the length of the diameter of the eye; variable in colour, usually brown, mixed with white; mid joint paler on side below. Maxillary palpi brown, paler basally. Face barely protruding forward beyond the eye; broadly rounded, ochreous-brown. Vertex concolorous. Patagia, thorax and tegulae glossy-bronze.  $R_1$  in the forewing free. Frenulum of the female triple. Length 11—14 mm., maximal width 3,5—4,8 mm. Costa rather straight; apex acuminate; termen vertical to costa, straight. Ground colour markedly shiny-bronze, dusted with white scales which, in some instances, form intervenular lines in the outer area. Transverse markings absent. Discal dot very distinct. Terminal dots well defined, eight in number. Fringes concolorous with ground colour. Hindwing glossy white with fringes concolorous; in male fringes shaded with grey in the outer area and termen bordered with darker. Under surface: Forewing glossy yellowish to grey-brownish, in some instances with dorsal area whitened; hindwing rather concolorous with the upper surface, being but tinged with yellowish in the costal area.

*Calamotropha atkinsoni malaica* ssp. n.

[Pl. XXXII, Fig. 50]

Forewing less glossy than in typical form from India and Ceylon. Subterminal and medial fascia more or less distinct. Described from one example of each sex from Singapore and one female from Borneo. Genitalia in both sexes strikingly similar to those in the typical form. The male from Singapore is designated as the holotype.

## Male genitalia

Uncus very short, rounded; typical long, basal hairs present. Gnathos rather weakly sclerotized, long. Tegumen tapering ventrad. Valva undivided, rather rectangular. A narrow, hairy fold obliquely from dorsal-basal angle. Costa faintly concave, lacking hair. A small, dentate thickening in apical part of costa and a heavily sclerotized fold from dorsal-caudal angle extending to near ventral edge. Hairs not numerous, scattered over apical and ventral portion of valva. Pseudosaceus proportionately short. Vinculum narrow.

Aedeagus equal to length of the total armature, rather straight, gently narrowed beyond its basal part; vesica armed with two large, arched, tapering, sharply pointed cornuti and numerous very minute cornuti towards apex.

#### Female genitalia

Labia rather normal; posterior apophyses slightly dilated in basal half. Genital plate broad with anterior apophyses long and thin. Ostium pouch is a large bag, rather well sclerotized, thickly clothed with minute spines; it is dilated proximally, deeply notched dorsally; in the type of *Crambus holodryas* (MEYER.) proximal margin of notch markedly, triangularly projected. Ductus bursa enarrow, lightly sclerotized. Bursa copulatrix elongate, minutely scobinate; no signum present.

#### Comments

*Calamotropha atkinsoni* ZELL. is one of the three species placed by ZELLER in his genus *Calamotropha* ZELL. The type was taken in Calcutta. The species ranges from Ceylon and India to Siam and the Philippines. — MARTIN (1954: 117) pointed out that *Crambus holodryas* MEYR. described from a unique female example coming from Siam is apparently conspecific with the species under consideration. However, both *C. holodryas* (MEYER.) and *C. atkinsoni* ZELL. differ somewhat in their female genitalia (see fig. 188 and 189). The matter appears to the obscure. *Calamotropha fuscicostella* SNELL. described from Celebes is obviously identical with *C. atkinsoni* ZELL. as my study of the lectotype and its genitalia shows. — The subsequent *C. lupata* (MEYR.) is very close to, but perfectly distinct from *C. atkinsoni* ZELL.

#### Material examined

Typical form: Holotype of *Calamotropha atkinsoni* ZELL. — male: „Calcutta“, coll. Brit. Mus. (N. H.); holotype of *Crambus holodryas* MEYR. — female: „Siam WL 32“, GS-5626/B. M./BL., coll. Brit. Mus. (N. H.); Lectotype of *Calamotropha fuscicostella* SNELL. — male, Celebes, GS-3387, coll. Rijksmuseum v. Natuurlijke Historie, Leiden; one male from Ceylon, GS-1219/BL., author's coll.; one female from Manilla, Luzon, GS-1474/BL., coll. Brit. Mus. (N. H.); one female from Hambantota, coll. Brit. Mus. (N. H.).

*Calamotropha atkinsoni malaica* ssp. n.: holotype — male: „Singapore. H. N. RIDLEY. 1900—115“, GS-2178/B. M., coll. Brit. Mus. (N. H.); allotype — female: „Singapore. IV. 1905 F. WOOD JONES. 1908—270“, GS-2179/B. M., coll. Brit. Mus. (N. H.); one female typoid; „Labuan, Borneo. III. [18]92. A. EVERETT. Dry reason“, GS-1233/BL., author's coll.

#### *Calamotropha lupata* (MEYRICK)

[Pl. XXXII, Fig. 51, Pl. LI, Fig. 130]

1932. *Crambus lupatus* MEYRICK, Exot. Micr. 4: 344 (sp. n.).

1954. *Calamotropha lupatus*, MARTIN, Ent. 87: 117, 118, f. 2.

Ocelli vestigial, nearly invisible. Antennae brownish, of a basic *Calamotropha*-shape in both sexes. Labial palpi a trifle more than twice the length of the diameter of the eye; brown, dusted with whitish, or yellowish. Maxillary

palpi rather concolorous with labial palpi. Face broadly rounded, barely protruding forward beyond the eye; grey-brown. Patagia, thorax and tegulae decidedly glossy, dark grey-brown. Forewing.  $R_1$  free. Frenulum of the female triple. Length 11—13 mm., maximal width 3,8—4,5 mm. Ground colour dull grey-brown, densely dusted with whitish scales; pattern rather brown. Subterminal fascia broadly excurved in its upper portion and obliquely straight on dorsum. Medial fascia in some instances less distinct than the subterminal one, or vestigial; it is strongly oblique from costa to beyond discal dot, thence obliquely straight or vertical to dorsum. Discal dot well defined, very dark. Terminal dots black, more or less well defined. Fringes glossy brownish. Hindwing whitish greyish, shaded along peripheries or, only in apical area. Fringes concolorous with adjacent area, glossy. Under surface: Forewing distinctly glossy, uniformly pale brown-yellowish; no traces of any marking present; hindwing rather concolorous with upper surface except for costa, which is broadly yellowish.

#### Male genitalia

Uncus very short and broad, rather similar to that in preceding species. Hairs very long. Gnathos long, rather poorly sclerotized. Tegumen normal. Valva undivided, heavily sclerotized, elongate, with costal and ventral margin nearly parallel. Costa at base oblique, further on rather straight and broadly curved at apex; hair lacking. Terminal portion strongly concave ventrally; margin decidedly strengthened. Anal-ventral angle produced in a rather triangular, rounded projection. Hair poor. An oblique, rather feeble, hairy fold obliquely from above middle of valva to near anal-ventral angle. Pseudosaccus well developed. Vinculum very large. Aedeagus a trifle shorter than the total armature, rather narrow, fairly curved ventrad, slightly swollen dorsally just before midway from base; apex heavily sclerotized dorsally, terminated by a strong, tapering spine.

#### Comments

This species was described from two male specimens from Punjab, Lyallpur. They were bred from pupae in stems of *Typha latifolia* L. I designate as the lectotype the male labelled: „Punjab. Lyallpur. D. G. KHAN A. SAUGH. 27. VIII. [19]30“, GS-1744/B. M. — *C. lupata* (MEYR.) is very close to the preceding species, however, the two are very easy to separate by the decidedly glossy forewing in the latter and the dull forewing in the former. The female of *C. lupata* (MEYR.) is not as yet known.

#### Material examined

Lectotype — male: „Punjab, Lyallpur, D. G. KHAN A. SAUGH. 27. VIII. [19]30“, GS-1744/B. M.; one male lectotypoid: „Lyallpur, Punjab. bred. IV. [19]30“, GS-1542/B.L.; one male: „Coimbatora, Madras. bred. IX. [19]32“. All specimens coll. Brit. Mus. (N. H.).

*Calamotropha corticella* (HAMPSON), comb. n.

[Pl. XXXIII, Fig. 55, Pl. XLVIII, Fig. 118, Pl. LIX, Fig. 171]

1899. *Crambus corticellus* HAMPSON, J. Bomb. Nat. Hist. Soc. 12: 305 (sp. n.).

Ocelli vestigial, slightly visible. Antennae uniformly brown, serrate in both sexes. Labial palpi three times the length of the diameter of the eye; fairly broad, brown, dusted with whitish. Maxillary palpi concolorous. Face not protruding forward beyond the eye, broadly rounded, brown. Vertex brown, scales erected. Patagia, thorax and tegulae brown. Forewing.  $R_1$  free. Frenulum of the female triple. Length 8—11 mm., maximal width 2,5—4,3 mm. Costa fairly straight, apex rather acute; termen very delicately wavy, rather vertical to costa. Ground colour slightly glossy brown, poorly irrorated with pale whitish scales. Discal dot dark brown, rather well defined. Medial dot and transverse markings absent. Fringes slightly glossy, a trifle paler than ground colour. Hindwing slightly glossy greyish, very narrowly bordered with darker. Fringes glossy, dirty yellowish, paler than ground colour. Under surface: Forewing unicolorous, glossy brown; hindwing paler with costal area markedly shaded.

## Male genitalia

Uncus proportionately very broad, long; apex obliquely truncate. Typical long basal hairs present. Gnathos a trifle longer than uncus, very slender, arched dorsad. Tegumen rather narrow. Valva undivided; costa with basal-dorsal area heavily sclerotized and bordered. Apex with a triangular, heavily sclerotized area. Ventral margin provided with a narrow, strongly sclerotized, apically dentate process situated in about three-fifths from base. Hairs of medium length, scattered over the terminal and ventral part of valva. Pseudosaccus well developed. Vinculum decidedly tapering cephalad. Aedeagus fairly straight, terminated by a very long spine that is slightly arched, tapering to a sharply pointed tip. A single very small, tapering cornutus present.

## Female genitalia

Labia with caudal margins distinctly concave; posterior apophyses dilated in basal half. Genital plate normal. Ostium pouch broad; it is membranous proximally and with a bilobed, heavily sclerotized, minutely spined plate distally; a scobinate area beyond the latter. Ductus bursae narrow, lightly sclerotized throughout. Bursa copulatrix decidedly elongate, longer than ductus. No signum present.

## Comments

This species is a typical member of the genus. However, it shows no greater resemblance to other species of *Calamotropha* ZELL. and occupies an isolated

systematic position among them. The most similar species is *C. atkinsoni* ZELL. However, the two are easily separable on colour of wings. The forewing in *C. corticella* (HMPS.) is much duller and the hindwing is decidedly darker than in the second species. As far I know, the species under consideration is distributed in Eastern India (Khasis Hills and Calcutta). There is one example of each sex of *C. corticella* (HMPS.) labelled „Type“ in the type-collection at the British Museum (N. H.). However, HAMPSON in his original description of this species mentions the male as the type. Consequently the above mentioned female bearing the label „Type“ should be considered only as the typoid; it lacks the abdomen.

#### Material examined

Holotype — male: „Khasis May 1894, Nat. Coll.“ „Khasis 96—140“, GS-5527/B. M./BL., a female typoid „Calcutta“, both coll. Brit. Mus. (N. H.); three males, GS-1231/BL., and one female, GS-1390/BL., from Khasis, coll. Brit. Mus. (N. H.) and author's coll.

#### *Calamotropha alcesta* sp. n.

[Pl. XXX, Fig. 41, 42, Pl. LII, Fig. 136, Pl. LXIII, Fig. 190, 191]

Ocelli vestigial, nearly invisible, or absent. Antennae pale beige, unicolorous; of male distinctly serrate, of female flatly serrate. Labial palpi slender, more than three times the length of the diameter of the eye; rather light brown; apical joint whitened outwardly above; the whole palpi whitened from above. Maxillary palpi brown on basal half and white on distal half. Face barely protruding forward beyond the eye, broadly rounded; white. Vertex concolorous. Patagia brown, lightened with beige centrally. Thorax and tegulae brown. Forewing.  $R_1$  free. Frenulum of the female triple. Length 9—12,5 mm., maximal width 3—5 mm. Costa arched basally, further on almost straight, being delicately arcuate at the very apex; the latter acute; termen straight, rather vertical to costa. Ground colour fairly glossy, pale creamy-beige, poorly suffused with dark tawny scales. A narrow, brown, longitudinal, expanding stripe from wing base up to termen; margins of stripe amalgamated with ground colour; dorsal margin bordered with a dark brown shade in basal portion. Discal dot well defined, lying above stripe. No medial dot present. Subterminal fascia is a narrow, poorly marked, brown line; upper portion broadly excurved, lower portion obliquely straight to dorsum. Fringes rather glossy, brown, lightened at their very bases. Hindwing slightly glossy brown in male; glossy white to whitish, delicately tinged with darker along peripheries in female. Fringes glossy whitish in both sexes. Under surface. Forewing glossy unicolorous brown, but discal dot traceable; hindwing whitish with fringes concolorous.

#### Male genitalia

Uncus rather arched, slender, somewhat longer than gnathos, tapering to an acute point. Hairs of medium length dispersed throughout the length

of uncus; no typical long basal hairs present. Gnathos rather equal to length of uncus, rather rounded terminally. Valva deeply divided into three lobes. The costal lobe is decidedly less sclerotized than the second and third lobe; apical portion broadly rounded, clothed with numerous, rather long hairs. The medial lobe is straight, dagger-like, tapering to a sharply acuminate tip at the very apex; it is well sclerotized, lacking hair. The ventral lobe is shorter than the medial one, tapering from base up to apex, hairy. Pseudosaccus well developed, long. Vinculum very long and broad, narrowed terminally in a very narrow, finger-like process. Aedeagus slender, very long, slightly bent just before middle; vesica armed with three extremely minute cornuti and scobinations towards the apex.

#### Female genitalia

Labia with caudal margins rather straight; posterior apophyses gradually expanding towards base. Genital plate broad, anterior apophyses of medium length. Ostium pouch moderately sclerotized, very finely spined; margins rolled ventrally. Ductus bursae lightly sclerotized throughout, wide beyond ostium pouch, further markedly narrowed, with a feeble, longitudinal wrinkling to midway to bursa. The latter decidedly elongate, approximately equal to length of ductus bursae; no signum present.

#### Comments

The new species is described from two male and six female specimens from India. Two of these were placed under *C. atkinsoni* ZELL. in the main collection at the British Museum (N. H.) in London. However, both the new species and *C. atkinsoni* ZELL. are very easy to distinguish on both the colour and pattern, as well on the genital armature of both sexes. *C. atkinsoni* ZELL. is decidedly more uniform in the colour of the forewing which is strongly shiny bronze, being slightly glossy beige with a distinct dark stripe in the new species. The genitalia of the two are perfectly distinct as is shown in the figures. The species is not a typical member of the genus as the hair of the uncus shows, otherwise the characters are of *Calamotropha* ZELL.

#### Material examined

Holotype — male: „Nilgiris, HAMPSON Coll. 89—127“, GS-1223/B.L., coll. Brit. Mus. (N. H.); allotype — female: „Ind. Orient. STT. 1866“, „ZELL Coll. 1884“, GS-1613/B.L., coll. Brit. Mus. (N. H.); one female typoid: „1899, Darjeel. v. HDM.“, abdomen lacking, coll. IZPAS, Warszawa; one female paratypoid: „Shillong, IX [18]93, ASSAM“, GS-1217/B.L., author's coll.; one female typoid: „Darjeeling“, GS-1775/B.L., author's coll.; one male and two female typoids from Darjeeling, ♂ — GS-1668/B.L., ♀ — GS-1670/B.L., coll. Muz. Gr. Ant., Bucarest.

***Calamotropha subalcesta* sp. n. ♀**

[Pl. XXX, Fig. 43, Pl. LXIII, Fig. 192]

Female. Ocelli absent. Frenulum triple.  $R_1$  in the forewing runs freely. Facies strikingly similar to that of the preceding species. Length of forewing 9,5 mm., maximal width 3 mm.

**Female genitalia**

Labia similar to those in *C. alcesta* sp. n. Genital plate and anterior apophyses as in *C. alcesta* sp. n. Ostium pouch rather heavily sclerotized, very finely toothed. It differs from that of *C. alcesta* sp. n. that the dorsal part is strongly developed and even somewhat protruding caudad beyond the ventral part; in addition, ostium pouch is not dilated proximally as in *C. alcesta* sp. n. Other details are shown in the figures. Ductus bursae narrow, lightly sclerotized throughout. Bursa copulatrix ovate, no signum present.

**Comments**

The new species is described from a unique female specimen from Formosa. Both *C. alcesta* sp. n. and *C. subalcesta* sp. n. are strikingly similar in their facies, but perfectly distinct by the female genitalia. The discovery of the male of the species under consideration would certainly clarify the distinctness of both *C. alcesta* sp. n. and *C. subalcesta* sp. n.

**Material examined**

Holotype — female: „Formosa, Koannania. 3. XI. 1907. A. E. WILEMAN, 1913—180“, GS-1624/B.L., coll. Brit. Mus. (N. H.).

***Calamotropha saturnella* sp. n. ♂**

[Pl. XXX, Fig. 44, Pl. XLVIII, Fig. 117]

1896. *Crambus anticellus*, HAMPSON (nec WALKER), Proc. Zool. Soc. Lond. 1895: 926 (in part).

Male. Ocelli absent. Antennae distinctly serrate; uniformly whitish. Labial palpi twice the length of the diameter of the eye; mid joint brown, apical joint white, scarcely irrorated with brown scales. Maxillary palpi brown on basal half and white on distal half. Face rounded, not protruding forward beyond the eye; white. Vertex concolorous with face. Patagia, thorax and tegulae pale brownish. Forewing.  $R_1$  in the forewing runs freely. Length of forewing 12 mm., maximal width 4,5 mm. Costa nearly straight; apex sharply acuminate; termen faintly sinuate, not arched, nearly vertical to costa. Ground colour fairly glossy, pale brownish, tinged with whitish in dorsal area. Discal dot poorly defined. Medial dot present; it is larger than the discal dot, situated

in two-fifths from the wing base. Subterminal fascia is a row of brown specks; upper portion broadly excurved, lower portion obliquely straight to dorsum. Termen narrowly edged with brown. Fringes glossy white, darkened with pale brownish at their ends. Hindwing glossy, dirty creamy with fringes white. Under surface: Forewing glossy, uniformly brown; hindwing dirty creamy, glossy, darkened with brown in dorsal area.

#### Male genitalia

Uncus very long and slender, pointed terminally; typical long at base present. Gnathos equal to length of uncus, slender, narrowly rounded apically. Tegumen poorly clothed with hairs on ventral side. Valva undivided, it is heavily sclerotized, gradually tapering caudally; apex rather narrowly rounded; no differentiations present. Hairs rather long, dispersed over medial and terminal portion. Pseudosaccus proportionately large. Vinculum longer than valva. Aedeagus a trifle shorter than the total armature, gently bent in two-fifths from base; terminal half decidedly more heavily sclerotized than basal half; vesica armed with two moderate tapering cornuti.

#### Comments

The new species is described from two male specimens from Travancoore (extreme south of India). These specimens were cited by HAMPSON (1896: 926) as belonging to „*Crambus anticellus* WALK.“. — It is a typical member of the genus under consideration. Because of the considerable distinctness of the armature of the genitalia this species occupies a rather isolated systematic position among the species of *Calamotropha* ZELL.

#### Material examined

Holotype — male: „Travancoore. 93—144. Ashambott pr. 93“, GS-1214/B.L.; one male typoid labelled as the holotype, GS-5660/B. M./B.L. The two in coll. Brit. Mus. (N. H.).

#### *Calamotropha leptogrammella* (MEYRICK), comb. n.

[Pl. XXV, Fig. 23, 24, Pl. XLVII, Fig. 115, Pl. LXII, Fig. 186]

1878. *Chilo paramattellus* MEYRICK, Proc. Linn. Soc. N. S. Wales 3: 178 (sp. n.) (in part).  
 1879. *Chilo leptogrammellus* MEYRICK, Proc. Linn. Soc. N. S. Wales 4: 207 (sp. n.).  
 1886. *Calamotropha delatalis*, MEYRICK (nec WALKER), Proc. Linn. Soc. N. S. Wales (2) 1: 803.  
 1896. *Crambus leptogrammellus*, HAMPSON, Proc. Zool. Soc. Lond. 1895: 927.  
 1904. *Crambus leptogrammellus*, TURNER, Proc. Roy. Soc. Queensl. 18: 163.

Ocelli vestigial. Antennae brownish, uniform, of a basic *Calamotropha*-shape. Labial palpi more than three times the length of the diameter of the eye; pale brown; white from above. Maxillary palpi brown on basal half and white on distal half. Face very slightly protruding forward beyond the eye,

white. Vertex concolorous. Patagia pale beige at sides and white centrally. Thorax and tegulae pale beige.  $R_1$  in the forewing free. Frenulum of the female triple. Length of forewing — male 11,5 mm., female 9 mm.; maximal width — male 4 mm., female 2,5 mm. Costa of male straight, of female faintly arched. Apex markedly acute in both sexes. Termen decidedly oblique in both sexes. Ground colour rather glossy, pale straw-brownish. Discal dot small but well defined. Terminal dots distinct, eight in number. Veins and intervenular spaces outlined with pale yellowish. Fringes glossy whitish, with a narrow, pale brown, dividing line. No trace of any fascia present. Hindwing glossy whitish with fringes glossy white. No terminal dots present. Under surface glossy, uniform, forewing brownish with fringes white; hindwing somewhat darker than on the upperside.

#### Male genitalia

Uncus slender, long, slightly bowed ventrad with apex tapering to a slight point; basal hairs present. Gnathos decidedly shorter than uncus, angled beyond base, then slightly bowed ventrad; apical portion rather swollen, apex rounded. Tegumen normal, tapering ventrad from middle. Valva undivided; costa rather straight, but abruptly oblique in basal portion; apical area heavily sclerotized, hairy, a distinct process from ventral angle; ventral margin decidedly bowed, hairy. Pseudosaccus well developed, rather large. Vinculum about ovate, tapering cephalad, with apex narrowly rounded. Aedeagus decidedly bent midway from base, slender, nearly evenly wide throughout, a trifle shorter than the total armature; a narrow ventral notch, finely dentate on either side; vesica scobinate towards apex.

#### Female genitalia

Labia with caudal margins straight, basal strengthenings running throughout bases; posterior apophyses gently dilated in basal half. Genital plate wide with anterior apophyses distinctly dilated from midway from apices. Ostium pouch linked to genital plate with a membrane; moderately sclerotized, thickly wrinkled, tapering caudally to a point. Ductus bursae moderate, narrow; bursa copulatrix decidedly elongate, no signum present.

#### Comments

The species was described together with *Chilo paramatellus* MEYR. [a synonym of *C. paludella* (HBN.)] from several male and female examples from Sydney, Parramatta. A year later, MEYRICK separated both species, however, he was in error in considering that *Chilo leptogrammellus* MEYR. was described as females of *Chilo paramatellus* MEYR. One example of each sex taken in 1878 at Sydney are before me. These are obviously of material described as *Chilo paramatellus* MEYR. and MEYRICK considered them to be females.

I designate the male labelled: „Sydney N. S. Wales, [18]78“, GS-1355/BŁ., as the lectotype of *Calamotropha leptogrammella* (MEYR.). This species has subsequently been confused by MEYRICK himself with *C. delatalis* (WALK.) as that author in 1886: 803 sank *C. leptogrammella* (MEYR.) under *C. delatalis* (WALK.). In fact, I have found in the collection of MEYRICK a male taken in 1882 at Healesville, Victoria, under *C. leptogrammella* (MEYR.). — TURNER (1904: 163) separates both mentioned species, however, he considers after MEYRICK *C. leptogrammella* (MEYR.) to be the females of *Chilo paramattellus* MEYR. — Both *C. leptogrammella* (MEYR.) and *C. delatalis* (WALK.) show a rather striking resemblance of the pattern and colour, however, they are very easily separable by decidedly oblique termen of the forewing of the former which is nearly vertical to costa in the latter. In addition, the two are perfectly distinct from each other on their genitalia of both sexes, which are different in practically each detail, as is shown in the figures.

The two species are as yet known to be distributed strictly in Australia. TURNER (1904: 163) quoted *C. leptogrammella* (MEYR.) from Queensland (Brisbane, Dalby), New South Wales (Tenterfield, Sydney; and from North West Australia (Roebourne). The collection of IZPAS in Warszawa includes one female of this species coming from Tasmania.

#### Material examined

Lectotype — male: „Sydney N. S. W. 22. X. [18]78“, GS-1355/BŁ.; one female lectotypoid; „N. S. Wales. 8. III. [18]78“, GS-1348/BŁ.; one male and one female: „Sydney, N. S. Wales 10. X. [18]86“ (in MEYR. coll.); one female from Australia from ZELLER's coll. — coll. Brit. Mus. (N. H.); one female from Australia, author's coll.; one female from Tasmania, coll. IZPAS, Warszawa.

#### *Calamotropha delatalis* (WALKER)

[Pl. XXV, Fig. 21, 22, Pl. XLVII, Fig. 116]

1863. *Crambus delatalis* WALKER, List. Spec. Lep. 27: 176 (sp. n.).  
 1886. *Calamotropha delatalis*, MEYRICK, Proc. Linn. Soc. N. S. W. (2) 1: 803 (in part).  
 1896. *Crambus delatalis*, HAMPSON, Proc. Zool. Soc. Lond. 1895: 927.  
 1924. *Calamotropha delatalis*, TURNER, Ark. Zool. 16 (3): 3.

Ocelli vestigial. Antennae distinctly serrate, uniformly glossy greyish. Labial palpi more than twice the length of the diameter of the eye; white from above and mid joint at side on lower part, otherwise brown. Maxillary palpi brown on basal half and white on distal half. Face broadly rounded, not protruding forward beyond the eye; white. Vertex concolorous. Patagia pale beige with central portion whitened. Thorax and tegulae pale beige. The moth is rather variable in size. Length of forewing 9,5 to 16 mm., maximal width 3 to 5,8 mm. Frenulum of the female triple.  $R_1$  runs freely. Costa arched, apex rather acute, termen straight, almost vertical to costa. Ground colour glossy pale straw-brownish-yellow. Discal dot brown, distinct. The veins delineated with pale straw yellow. Similarly coloured longitudinal streaks in intervenular

spaces in the outer portion of the wing. Terminal dots eight, well defined. Fringes glossy pale brown, narrowly lightened at their bases. Hindwing greyish to whitish, glossy; a few terminal dots poorly defined at lower part of the termen. Fringes glossy whitish, a trifle paler than the ground colour. Under surface of both wings glossy, somewhat darker than the upper side.

### Male genitalia

Uncus long, slender, gradually tapering; the typical long hairs at base are present. Tegumen normal. Valva very distinctive by its deep division into two long lobes. The costal lobe is heavily sclerotized, lacks hair, arched dorsally, tapering to sharply pointed tip. Ventral lobe a narrow, lightly sclerotized, posteriorly expanding, apically rounded process; hairs rather short, dispersed throughout. Basal portion of the valva heavily sclerotized, its central area provided with short hairs. Pseudosaccus long, fully developed. Vinculum large, tapering. Aedeagus distinctly shorter than the total armature, slender; no cornuti present.

### Comments

MEYRICK in 1880 sank his *Chilo leptogrammellus* MEYR. as a synonym of the species under consideration. However, the syntypes of the former species present an apparently distinct species, as my study has shown. Only one male from the MEYRICK collection placed together with *Calamotropha leptogrammella* (MEYR.), labelled „Healesville, Victoria, 19. II. [18]82“ belongs to *Calamotropha delatalis* (WALK.). However, that male was taken in 1882, consequently it could not be considered as the syntype of *C. leptogrammella* (MEYR.), as the latter was described in 1879.

The WALKER type is a male coming from Moreton Bay, Australia. The female of this species is unknown to me.

TURNER quotes (1937: 65) that the larva of this species feeds on Nut Grass (*Cyperus rotundus* LINN.).

### Material examined

Holotype — male: „Moreton Bay“, GS-5524/B. M./BL., coll. Brit. Mus. (N. H.); one male from Healesville, Victoria, GS-1366/BL., coll. Brit. Mus. (N. H.); one male from Logan Village, Queensland, GS-708/BL., coll. Naturhistoriska Riksmuseet, Stockholm.

### *Calamotropha arachnophaga* (STRAND), comb. n.

[Pl. XXIII, Fig. 16, Pl. LXIV, Fig. 195]

1918. *Crambus arachnophagus* STRAND, Stett. ent. Zeit. 79: 252 (sp. n.).

1928. *Crambus arachnophagus*, SHIBUYA, J. Fac. Agr. Hokkaido Imp. Univ. 22: 49.

Female. Ocelli absent. Antenne uniformly light brownish, of a basic *Calamotropha*-shape. Labial palpi three and one half the length of the diameter of the eye; brownish, whitened from above. Maxillary palpi brownish on basal

half and white, on distal half. Face slightly protruding forward beyond the eye, white mixed with brown. Vertex whitish. Patagia, tegulae and thorax beige. Frenulum triple.  $R_1$  in forewing coincident with  $Sc$ . Length of forewing 7 mm., maximal width 2,1 mm. Costa slightly arched, apex acuminate, termen oblique, slightly bowed. Ground colour rather glossy brown. Transverse markings absent. Discal dot rather well defined. Median dot absent. Terminal dots present from apex to anal angle. Fringes glossy, rather concolorous with ground colour. Hindwing glossy white with fringes concolorous. Under surface strongly glossy, uniformly coloured; forewing pale brownish, hindwing concolorous with upperside.

#### Female genitalia

Labia with caudal margins rather straight, basal strengthenings very narrow; posterior apophyses barely dilated in basal half, long, slender. Genital plate normal with anterior apophyses slightly dilated in basal half. Ostium pouch linked to genital plate with a membranous bridge; rather small, proximal half lightly sclerotized, caudal half rather heavily sclerotized, minutely spined; ventral portion produced in a rounded sheet. Ductus bursae very narrow, lightly sclerotized throughout. Bursa copulatrix rather ovate; no signum present.

#### Comments

This species was described from three female examples from Anping, Formosa. Two of these are before me. STRAND in his original description did not designate the holotype, so, I designate as the lectotype the female labelled: „Anping, Formosa, H. SAUTER. 11. VI. 1911“, „Typus“, „Strand det. *Crambus arachnophagus* m. ♀“, GS-1947/B.L. — The species is very distinctive by the absence of transverse fascias and the median dot and by very small size. It is somewhat similar to *Calamotropha subfamulella* (CAR. & MEYR.). The latter shows, however, the median dot, a trace of the subterminal fascia and  $R_1$  in the forewing free.

#### Material examined

Lectotype — female, labelled as given above; one female lectotypoid: „Anping, Formosa. H. SAUTER. V. [19]11“, both in coll. Deutsche Entomologisches Institut, Berlin.

#### *Calamotropha dielota* MEYRICK

[Pl. XXXIV, Fig. 58, Pl. LIII, Fig. 138, Pl. LIX, Fig. 168]

1886. *Calamotropha dielota* MEYRICK, Trans. Ent. Soc. Lond. **1886**: 268 (sp. n.).  
 1896. *Crambus dielota*, HAMPSON, Proc. Zool. Soc. Lond. **1895**: 926.  
 1896. *Crambus anticellus*, HAMPSON (nec WALKER), Proc. Zool. Soc. Lond. **1895**: 926 (in part).  
 1904. *Crambus dielotus*, TURNER, Proc. Roy. Soc. Queensl. **18**: 162.  
 1904. *Crambus anticellus*, TURNER (nec WALKER), Proc. Roy. Soc. Queensl. **18**: 162 (in part).

Ocelli absent. Antennae pale beige to brown, of a basic *Calamotropha*-shape. Labial palpi about three times the length of the diameter of the eye; slender, curved ventrad, pale yellowish-brown to brown, with dorsal portion whitened. Maxillary palpi light brown on basal half and white on distal half. Face barely protruding forward beyond the eye, creamy. Vertex concolorous. Patagia light yellow-brownish to brown, in some instances whitened centrally. Thorax and tegulae pale brownish to brown.  $R_1$  in the forewing free. Frenulum of the female triple. Length of forewing 8,5 mm., maximal width 3,8—4,5 mm. Costa of male feebly arcuate, of female more straight; apex fairly acute; termen straight and vertical to costa. Ground colour glossy yellowish-brown, in some instances lightened whitish in costal area. Discal dot distinct, but small. Medial dot often reduced, however, in some cases well defined and much larger than discal dot. Subterminal fascia a row of dark dots; in some instances slightly visible or, almost totally reduced, especially on costa and dorsum. Terminal dots well defined, eight in number. Fringes glossy, rather concolorous with ground colour. Hindwing glossy, dirty whitish, termen usually narrowly shaded with darker; fringes glossy white; in females hindwing is rather pure white. Under surface glossy, uniform, in females much lighter than in males.

#### Male genitalia

Uncus slender, long, slightly bowed ventrad, nearly evenly wide throughout except for the apex, which is tapering to a point. Gnathos somewhat shorter than uncus, rather similar to that in *C. leptogrammella* (MEYR.), with apex broadly rounded. Tegumen rather expanding ventrad with pedunculi hairy. Valva proportionately short, slightly tapering to a truncate tip. Costa triangularly bowed. Apical part with a heavily sclerotized fold and a spine; hairy. Ventral margin slightly curved. Pseudosaccus well developed. Vinculum decidedly longer than valva, decidedly tapering cephalad, apex narrowly rounded. Aedeagus bowed dorsad, gradually tapering towards apex. The latter produced into two heavily sclerotized rods. Vesica armed with two rows of numerous, tiny cornuti.

#### Female genitalia

Labia with caudal margins barely concave; basal strengthenings extending to near apices of labia; posterior apophyses with central and basal part markedly dilated and with ventral margin dentate. Genital plate broad with long anterior apophyses; it is linked to ostium pouch with a narrow bridge. Ostium pouch heavily sclerotized, narrow, rather long, distinctly, longitudinally wrinkled. Ductus bursae bulbous beyond ostium pouch, then barely expanding to bursa copulatrix. The latter rather ovate, no signum present.

#### Comments

*Calamotropha dielota* MEYR. was described from one example of each sex from Fiji. I designate as the lectotype the male labelled: „Lautoka, Fiji. HP.

24. VII. [18]27", GS-5627/B. M. This species has hitherto been in a great confusion. Consequently, all the records in literature need thorough verification. Nearly all the specimens from Australian Region cited as belonging to „*Crambus anticellus* WALK.“ belong to the species under consideration. In fact, the Australian specimens of HAMPSON'S „*Crambus anticellus* WALK.“ (1896: 926) are obviously *Calamotropha dielota* MEYR. According to kind information of Mr. I. F. B. COMMON of Canberra four females cited by TURNER as „*Crambus anticellus* WALK.“ (1904: 162) belong also to the species in question. The male specimen recorded by CARADJA and MEYRICK (1936: 152) as „*Crambus dielotus* MEYR.“ is a male of *Calamotropha subfamulella* (CAR. & MEYR.), from Shanghai, which was described in the same paper and on the same page. As far I know, *C. dielota* MEYR. is distributed in North Australia and North Queensland, New Guinea, Fiji, Ceram and the Admiralty Island. — This species is rather variable in colour and somewhat in male genitalia. Female genitalia of a series examples studied by me (from Australia, Fiji, Admiralty Island) show perfect stability. — The *C. dielota* MEYR.-Group needs further thorough study. In fact, there are several species rather similar on their facies, but perfectly distinct on their male and female genitalia. Unfortunately, most of these species are known only from one sex. Only *C. subfamulella* (MEYR.) is known from both sexes. *C. sumatraella* sp. n. from Sumatra and *C. pseudodielota* sp. n. from Ceylon are known from only single males. On the other hand, *C. unicorella* (ZELL.), *C. javaica* sp. n. and *C. schwarzi* sp. n. are known only from female examples. Perhaps some associations of males and females of the above mentioned species should be done.

#### Material examined

Lectotype — male: „Lautoka Fiji, HP. 24. VII. [18]27“, GS-5627/B. M./BL., coll. Brit. Mus. (N. H.); a long series of males and females from Manus, Admiralty Id., IX—X. 1913. (MEEK'S EXP.), GS-1059/BL., GS-1957/BL.; one male from Port Darwin [det. as *C. anticella* (WALK.)], coll. Brit. Mus. (N. H.); one female from Fiji, GS-1512/BL., coll. Brit. Mus. (N. H.); one male from Queensland, coll. Brit. Mus. (N. H.); 5 males and females from Fiji, coll. IZPAS, Warszawa; two females from St. Aignan, GS-627/BL., (det. as *Chilo partellus* SWINHOE), coll. IZPAS, Warszawa; one female from Brit. E. Guinea, GS-1215/BL., coll. Brit. Mus. (N. H.).

#### *Calamotropha sumatraella* sp. n. ♂

[Pl. LIII, Fig. 139]

1903. *Crambus anticellus*, E. HERING (nec WALKER), Stett. Ent. Ztg. 44: 84.

Male. Ocelli absent.  $R_1$  in the forewing runs freely. Coloration and pattern strikingly similar as in *C. dielota* (MEYR.). Length of the forewing 11 mm., maximal width 4 mm.

#### Male genitalia

Uncus and gnathos similar to those in *C. dielota* MEYR. Tegumen slightly expanding ventrad, pedunculi narrow. Valvae assymetrical. Right valva:

Very broad basally, tapering to a broadly rounded apex. Costa lacks hair, bowed. Terminal part hairy with a typical (as is *C. dielota* MEYR.) spine, extending from terminal-dorsal portion; a heavily sclerotized fold from spine, extending cephalad. A narrow fold from near anal-ventral angle to beyond centre of valva. Left valva: Costa with two large, triangular projections. Spine situated similarly as on the right valva. Apical portion somewhat narrower than in right valva. Pseudosaccus rather large. Vinculum about equal to length of valva, decidedly tapering cephalad. Aedeagus as long as valva plus vinculum, straight, narrow, terminated by typical two rods. The ventral rod is decidedly shorter than the dorsal one, slightly bifurcate terminally. No cornuti in vesica, only slight scobinations are present.

#### Comments

The new species was mentioned by E. HERING (1903: 84) as „*Crambus anticellus* WALK.“. This was a unique male specimen from Sumatra. Both *C. dielota* MEYR. and the new species are indistinguishable by the facies, but perfectly distinct on the male genitalia. The discovery of the females of this remarkable species would certainly clarify better its distinctness. Of course, it is possible that the male specimen from Sumatra is only an aberrant specimen of *C. dielota* MEYR. The latter shows the male genitalia somewhat variable, however, in spite of a study of a long series of *C. dielota* MEYR. from various localities in Australia, Fiji and Admiralty Islands, I have never found any intermediate genitalia between both *C. dielota* MEYR. and *C. sumatraella* sp. n. Very markable is the assymetry of the valvae in the new species, a character hitherto not met with among the genus under consideration. *C. dielota* MEYR. always shows two rows of minute cornuti which are lacking in the new species. The valva in *C. dielota* MEYR. is in most instances much smaller and shorter than the vinculum, whilst in the new species the valva is even a trifle longer and rather larger than the vinculum. However, despite such considerable differences, I do not exclude the possibility that the new species is only a geographical local race of *C. dielota* MEYR. Too little material is available for study to clarify this difficult problem. The male described above is the only male specimen of the *C. dielota* MEYR.-group known from Malaya.

#### Material examined

Holotype — male: „FI. 1895, Sumatra Soekas. D.“, GS-1611/BŁ., coll. IZPAS, Warszawa.

#### *Calamotropha shichito* (MARUMO), comb. n.

[Pl. LIII, Fig. 141]

1931. *Crambus shichito* MARUMO, Oyo-Dobuts. Zasshi 3: 26, fig. (sp. n.).

Unfortunately I have had no opportunity to examine the type-specimens of this species. However, Mr. M. OKANO of Morioka, Japan, has kindly sent me a sketch of male genitalia of a specimen determined by him as belonging

to *C. shichito* (MARUMO). Judging by that sketch of the genitalia, this species is very close to *C. subfamulella* (CAR. & MEYR.), differing in that the dorsal-costal spine-like, broad process is much smaller in the former than that in the latter. However, I am unable to state whether the two are distinct species, or perhaps *C. subfamulella* (CAR. & MEYR.) is only a local race of the species under consideration. *C. shichito* (MARUMO) is in a rather strong confusion as some years ago I have received from Japan two female examples determined as „*Crambus shichito* MARUMO“, however, belonging to a genus quite different from the *Calamotropha* ZELL. I figure the genitalia after the sketch of M. OKANO. The genitalia are from a male from Shizuoka, Pref., Japan, 16. V. 1955.

***Calamotropha subfamulella* (CARADJA & MEYRICK)**

[Pl. XXXIV, Fig. 57, Pl. LIII, Fig. 140, Pl. LIX, Fig. 169]

1936. *Crambus dielotus*, CARADJA & MEYRICK (nec MEYRICK), Dtsch. Ent. Iris **50**: 152 (male).  
 1936. *Crambus subfamulellus* CARADJA & MEYRICK, Dtsch. Ent. Iris **50**: 152 (female) (in part) (sp. n.).  
 1938. *Crambus distinctellus* [sic!], CARADJA (nec HAMPSON), Stett. Ent. Zeit. **99** : 250 (female).

Ocelli absent. Antennae glossy brown-grey; of a basic *Calamotropha*-shape. Labial palpi three and one half times the length of the diameter of the eye; glossy beige. Maxillary palpi beige on basal half and whitish on distal half. Face hardly protruding forward before the eye, rounded; creamy. Patagia pale brown at sides and beige-creamy centrally. Thorax and tegulae pale brownish. Frenulum in the female triple.  $R_1$  in the forewing runs freely. Length of forewing 8,5—9,3 mm., maximal width 2,6—3,4 mm. Costa almost straight; apex rather acuminate; termen hardly oblique, straight. Ground colour of the forewing decidedly glossy, light brown. Medial dot and discal dot very small, dark brown. Subterminal fascia hardly visible as a row of dark dots. Medial fascia absent. Terminal dots fully developed, distinct from apex up to anal angle. Fringes distinctly glossy, barely lighter than the ground colour, uniform. Hindwing markedly glossy, white-creamy with fringes concolorous. Under surface: Forewing distinctly glossy, uniformly light brown with termen narrowly edged with darker; hindwing concolorous with the upper surface, with costal area slightly tinged yellowish.

Male genitalia

Uncus and gnathos in general similar to those in *C. dielota* MEYR.; uncus with tip decidedly pointed. Tegumen with very large, trapezoidal; densely hairy pedunculi present. The latter slightly articulated dorsally with the former. Valva very broad and short with apex very broadly truncate. Costa much shorter than the ventral edge; straight, without hair. A large, heavily

sclerotized, pointed subcostal fold extending up to caudal-dorsal corner of valva. Another oblique, very narrow, hairy fold downwards from subcostal fold. Caudal margin of valva and caudal one-third of ventral margin hairy. Hairs dense only on caudal-dorsal area, otherwise scarce. Pseudosaccus moderate, distinct. Vinculum much longer than valva, in general similar to that in *C. dielota* MEYR. Aedeagus resembles that in *C. pseudodielota* sp. n.; straight, slender, longer than the total armature; two heavily sclerotized, thick, apical rods; the dorsal rod decidedly shorter than the ventral rod; the latter hardly notched apically. Two rows of very numerous, tiny cornuti are present; vesica scobinate cephalad.

#### Female genitalia

Labia with caudal margins hardly concave; basal strengthenings very narrow but distinct. Posterior apophyses markedly dilated from midway from apices. Genital plate normal with anterior apophyses dilated in basal half. Ostium pouch linked to genital plate with a membrane; bowl-shaped; opening large with margins markedly, lip-like folded; caudal half heavily sclerotized and cephalic half lightly sclerotized, with tiny wrinkling. Ductus bursae narrow, long, lightly sclerotized throughout. Bursa copulatrix moderate, elongate. No signum present.

#### Comments

This species comes very near *C. dielota* MEYR. However, both species are distinct on their external characters and genitalia. *C. subfamulella* (CAR. & MEYR.) is much smaller than the second species. The differences in the genitalia are shown in the figures.

*C. subfamulella* (CAR. & MEYR.) was described from two female specimens (not one male and one female as stated in the original description) captured in Lungtan, China. I designate the female labelled: „Lungtan bei Nanking, prov. Kiangsu, China, 20. V. 1933, H. HÖNE“ as the lectotype. The other female bearing similar label, but taken on 14. V. 1933 rather differs on colour and markings from the lectotype. This female belongs undoubtedly to a different species, possibly to *C. okanoi* sp. n. However, I am unable to solve definitely this problem as the mentioned specimen lacks the abdomen. Forewing in this specimen is much lighter than in the lectotype; subterminal fascia is better visible, it is a double, delicate brown line running from costa up to dorsal margin (in the lectotype the subterminal fascia is incomplete and indicated only by some dark dots), a brown triangle on costa near apex and the medial dot are present. This female resembles a large-sized specimen of *C. okanoi* sp. n.

The male of *C. dielota* MEYR. cited from Shanghai in the same paper in which was described *C. subfamulella* (CAR. & MEYR.) belongs undoubtedly to the latter species. Another specimen (female) of the species under consider-

ration was published by CARADJA (1938: 250) as *Crambus distinctellus* [sic!] HMPS. CARADJA made an error in spelling of the name as HAMPSON described from Formosa a species under the name *Crambus distinctellus* HMPS. (the other *Crambus distinctellus* was described by HAMPSON from Brasil) and *Crambus distinctellus* was described by LEECH. However, CARADJA undoubtedly considered the mentioned female as belonging to the HAMPSON and not to the LEECH species. The two are greatly different and *C. subfamulella* (CAR. & MEYR.) a little resembles *Crambus distinctellus* HMPS. described from Formosa.

#### Material examined

Lectotype — female: „Lungtan bei Nanking, prov. Kiangsu, China. 20. V. 1933. H. HÖNE“, GS-1730/BL.; one male „Shanghai (China), Provinz Kiangsu. 22. V. 1933. H. HÖNE“, GS-1738/BL.; one female: „Shanghai. 3. V.“, „*Crambus distinctellus* HMPS.“. All three specimens in coll. Muz. Gr. Ant., Bucarest.

#### *Calamotropha pseudodielota* sp. n. ♂

[Pl. LIII, Fig. 137]

Ocelli absent. Antennae creamy, slightly glossy. Labial palpi two and one half times the length of the diameter of the eye; brown at sides and distinctly whitened from above. Maxillary palpi brown on basal half and white on terminal half. Face not protruding forward beyond the eye, snow-white. Vertex concolorous with face. Patagia pale brown at sides and somewhat lightened in central area. Tegulae pale brownish. Thorax creamy.  $R_1$  in the forewing runs freely. Length of forewing 10 mm., maximal width 4 mm. Ground colour rather light greyish-brown, rather glossy. Discal dot distinct. Medial dot a rather well defined, dark patch. Subterminal fascia similar as in *C. dielota* MEYR. Terminal dots well defined from alar apex up to anal angle. Fringes damaged. Hindwing glossy whitish finely tinged with pale beige in apical area; fringes rather damaged. Under surface distinctly glossy; forewing uniformly pale brownish, hindwing white tinged pale beige in costal area.

#### Male genitalia

In general somewhat similar to the genitalia of *C. dielota* (MEYR.). Uncus and gnathos similar as in *C. dielota* (MEYR.). Tegumen strongly produced ventrally, hairy; dorsal margin distinctly list-like thickened. Valva about as long as vinculum, undivided. Costa distinctly thickened, base triangularly projected; a distinct rounded projection just beyond the middle; no hair. Apical portion markedly tapering to a rather pointed tip. A distinct spine just before the latter. Ventral margin markedly bowed, simple. Hairs scattered over terminal and ventral-terminal area. A bowed fold from near ventral margin beyond its middle to near basal-dorsal angle. Another small fold below costa just beyond its middle. Pseudosaccus well developed. Vinculum tapering cephalad. Aedeagus decidedly longer than vinculum plus valva; nearly straight,

terminated by two heavily sclerotized rods; the ventral rod is a trifle longer than the dorsal one and is toothed apically. Several very thin, moderately long cornuti towards apex are present.

#### Comments

This new species is described from a unique male specimen. I am unable to state the locality of the holotype as the label is written very indistinctly. Most probably this specimen was taken in Ceylon as it bears the MACKWOOD label.

*C. pseudodielota* sp. n. belongs to the very difficult and confused *C. dielota* MEYR.-group. Both *C. dielota* MEYR. and *C. pseudodielota* sp. n. are rather similar in their facies; the exact details which separate the two species are not given here, as the holotype of *C. pseudodielota* sp. n. is somewhat rubbed. The two are perfectly distinct on the male genitalia, especially by the armature of the valva and aedeagus. The costa in *C. dielota* MEYR. is simple, being markedly differentiated in the new species as is shown in the figure. The terminal rods of the aedeagus in the new species are much more stout and larger than in the second species and the cornuti are less numerous and much longer than in *C. dielota* MEYR.

It is possible that the females of *C. unicolorella* (ZELL.) belong to the species here described. However, the two differ in the coloration of head and vertex, in any case all the species of the *C. dielota* MEYR.-group are nearly indistinguishable on their facies. Too little material is available for my study to clarify this question. For a time I prefer to separate *C. pseudodielota* sp. n. and *C. unicolorella* (ZELL.).

#### Material examined

Holotype — male: „MACKWOOD coll. B. M. 1927/341“, „A. [19]12. IX“, GS-5665/B. M./BL. coll. Brit. Mus. (N. H.).

#### *Calamotropha javaica* sp. n. ♀

[Pl. XXXV, Fig. 61, Pl. LXVII, Fig. 208]

Female. Ocelli absent. Antennae whitish, slightly serrate. Labial palpi three times the length of the diameter of the eye, brown. Maxillary palpi similar in colour to those in preceding species. Face not protruding forward beyond the eye; scales damaged. Patagia beige, lightened in central area. Thorax and tegulae beige.  $R_1$  in the forewing free. Frenulum of the female triple. Length of forewing 9,5 mm., maximal width 3,6 mm. Costa slightly curved, apex acuminate, termen distinctly oblique, nearly straight. Ground colour brown. Discal dot distinct. Medial dot absent, only a slight shade in the central area of the wing poorly indicated. Subterminal fascia as in the allied species. Terminal dots well defined from alar apex up to anal angle.

Fringes glossy, paler than the ground colour. Hindwing a trifle transparent, whitish glossy with fringes concolorous. Underside of the forewing distinctly glossy, pale beige, with discal dot and terminal dots poorly visible; hindwing rather concolorous with the upperside.

### Female genitalia

Labia with caudal margins rather concave and basal strengthenings distinct, long. Posterior apophyses dilated in their basal half with margins irregularly dentate. Genital plate and anterior apophyses similar as in preceding species. Ostium pouch heavily sclerotized, a rectangular bowl with proximal border distinct; no wrinkling present. Ductus bursae looped just beyond ostium pouch, long, finely expanding cephalad, lightly sclerotized throughout, without wrinkling. Bursa copulatrix ovate, no signum present.

### Comments

The new species is described from a unique female specimen from Java. It is rather similar in facies to the next species, having only somewhat more oblique termen of the forewing. The main differences between both *C. unicolorella* (ZELL.) and *C. javaica* sp. n. are in the female genitalia. The ostium pouch in the new species has a quite different shape from that in the next species, additionally there is no distinct jointure linking genital plate to ostium pouch in the new species and the ostium pouch has a distinct border proximally. Ductus bursae in *C. unicolorella* (ZELL.) is not looped beyond the ostium pouch. In spite of mentioned differences I am not quite sure whether *C. javaica* sp. n. is a distinct species or perhaps an aberrant example of *C. unicolorella* (ZELL.). Only the discovery of the males of the two might solve the question.

I place this new species in the *C. dielota* MEYR.-group.

### Material examined

Holotype — female: „Java, Batavia. 1886 ♀“, GS-1590/B.L., author's coll.

### *Calamotropha unicolorella* (ZELLER), comb. n.

[Pl. XXXIV, Fig. 59, 60, Pl. LXVII, Fig. 207, Pl. LXVIII, Fig. 209—211]

1863. *Chilo unicolorellus* ZELLER, Chil. Cramb. Gen. Spec. p. 7 (sp. n.).  
 1896. *Crambus anticellus*, HAMPSON (nec WALKER), Proc. Zool. Soc. Lond. 1895: 926 (in part).  
 1896. *Crambus anticellus*, HAMPSON (nec WALKER), Fauna Brit. India p. 14 (in part).  
 1896. *Crambus unicolorellus*, HAMPSON, Proc. Zool. Soc. Lond. 1895: 927 (in part).

Female. Ocelli absent. Antennae glossy light brown to brown. Labial palpi three to three and one half times the length of the diameter of the eye; pale brown-beige to brown at sides and usually somewhat lightened from above.

Maxillary palpi brown, lightened on their apices. Face nearly not protruding forward beyond the eye, creamy to pale beige. Vertex pale beige to light brown. Patagia beige to light brown at sides and somewhat lightened creamy to pale beige in central area. Tegulae beige to light brown. Thorax usually light brownish.  $R_1$  in the forewing runs freely. Frenulum triple. Length of forewing 9,5 to 12,8 mm., maximal width 3,7 to 4,2 mm. Costa rather straight except for the base which is curved; apex markedly acuminate; termen rather straight, slightly oblique; anal angle broadly rounded. Ground colour in typical specimens distinctly glossy, but in some instances only slightly glossy; light brown, greyish-brown, or brown. Discal dot small, in some instances poorly defined. Medial dot absent or slightly visible. Subterminal fascia similar to that in *C. dielota* MEYR., obsolete on dorsum and costa. No medial fascia present. Terminal dots well indicated from alar apex up to anal angle. Fringes distinctly glossy, in most instances somewhat paler than the ground colour. Hindwing a little transparent, distinctly glossy, white to beige-creamy, with fringes concolorous or lighter than the ground colour. Under surface distinctly glossy; forewing light brownish, with discal dot well defined or absent, and terminal dots rather well defined; hindwing whitish to pale beige-creamy with fringes concolorous and costal area delicately tinged with darker.

#### Female genitalia

Labia with caudal margins slightly concave and basal strengthenings narrow and long; posterior apophyses decidedly dilated in their basal half with edges more or less dentate. Genital plate normal with anterior apophyses long and narrow. Ostium pouch linked to genital plate with a more or less long, rather heavily sclerotized bridge; flat, consisting of two slightly expanding cephalad, heavily sclerotized lamellas which are linked to each other with a transparent membrane; proximal border rather indistinct. Ductus bursae long, rather thin, lightly sclerotized throughout. Bursa copulatrix rounded, slightly ovate, or pear-shaped; no signum present.

#### Comments

This species has hitherto been in a strong confusion as the holotype has not hitherto been investigated. The ZELLER holotype is a female from Himalayas as stated by ZELLER. I have found some female specimens of *Calamotropha unicorella* (ZELL.) in the collection of the British Museum (N. H.) under „*Crambus anticellus* (WALK.)“. On these specimens were partially based the records of HAMPSON on the distribution of *Calamotropha anticella* (WALK.) (1896a: 926, 1896b: 14). HAMPSON (1896a: 927) was wrong in considering *Crambus abbreviatellus* WALK. as a synonym of the species under consideration. *Crambus abbreviatellus* WALK. is perfectly distinct from *Calamotropha unicorella* (ZELL.) and apparently belongs to the genus *Pediasia* HBN. (Comb. n.). (I have examined the holotype of *Crambus abbreviatellus* WALK.). Very fortunately

I have found the holotype of *Chilo unicolorellus* ZELL. in the collection at the Naturhistorisches Museum in Vienna. This species is a true member of the genus *Calamotropha* ZELL. as the wing venation, the absence of ocelli and the armature of the female genitalia show. Unfortunately the male of this remarkable species is as yet undiscovered. Perhaps the unique male specimen which previously is described as *Calamotropha pseudodielota* sp. n. should be associated with *C. unicolorella* (ZELL.). *C. unicolorella* (ZELL.) comes very near *C. dielota* MEYR., however, the two are perfectly distinct on the female genitalia as is shown in the figures. It should be also noted that the female described subsequently as *Calamotropha schwarzi* sp. n. perhaps belongs to the species under consideration. Both *C. unicolorella* (ZELL.) and *C. schwarzi* sp. n. differ by the colour of the forewing which is distinctly glossy in the former and quite dull in the latter; in addition, there are differences in their female genitalia as is shown in the figures. Too little material is available for study to solve definitely this difficult question.—As far as I know, *C. unicolorella* (ZELL.) is distributed from India and Ceylon to Borneo and the Philippines.

#### Material examined

Holotype of *Chilo unicolorellus* ZELL. — female: „Hügel. 717“, „ZELLER 50 Type“, „*Chilo unicolorellus* ZELL.“, GS-1780/B.L., coll. Nathist. Mus., Vienna; one female: „Ceylon Kegalle. X. [19]08. ALSTON. 1909—62“, GS-1225/B.L., coll. Brit. Mus. (N. H.); one female „Galgama. 10. VII“, GS-1280/B.L., coll. Brit. Mus. (N. H.); one female „Habarama. XI. [19]02“, coll. Brit. Mus. (N. H.); one female: „Ceylon. 95—37“, coll. Brit. Mus. (N. H.); one female: „Hambantota“, „Ceylon. 95—37“, coll. Brit. Mus. (N. H.); one female: „Manila Luzon. 5. III. 1913. (A. E. WILEMAN)“, GS-1334/B.L., coll. Brit. Mus. (N. H.); one female: Kolumbugen Lanao, plains, Mindanao. 16. IV. 1914. (A. E. WILEMAN)“, GS-1273/B.L., author's coll.; one female: „Sarawak [Borneo]. SWH.“, GS-1719/B.L., coll. Muz. Gr. Ant., Bucarest.

#### *Calamotropha schwarzi* sp. n. ♀

[Pl. XXXIII, Fig. 53, Pl. LXVII, Fig. 206]

Female. Ocelli absent. Antennae glossy, uniformly creamy, rather serrate. Labial palpi twice and one half the length of the diameter of the eye, pale beige; mid segment darkened with brown. Maxillary palpi brown, lightened apically. Face broadly rounded, not protruding forward beyond the eye, of cream colour. Vertex pale beige. Patagia light brownish, lightened medially. Thorax and tegulae rather light brownish.  $R_1$  in the forewing free. Frenulum triple. Length of forewing 12 mm., maximal width 4,7 mm. Costa extremely faintly arched; apex acute; termen nearly vertical to costa; tornus broadly rounded. Ground colour of forewing dull brown. Discal dot very small, poorly defined. Medial dot very indistinct and small. Subterminal fascia poorly traceable, consists of a row of small, brown dots; it is broadly excurved in the upper portion and oblique to dorsum in the lower portion. Terminal dots rather distinct, seven in number. Fringes rather concolorous with the adjacent

area of the wing, rather dull, unicolorous. Hindwing slightly glossy whitish with a faint yellowish hue in the apical area. Fringes concolorous with the adjacent area of the wing. Under surface: Forewing uniformly yellowish-brown; hindwing concolorous with the upper surface.

#### Female genitalia

Labia with caudal margins slightly concave; posterior apophyses long, markedly dilated in their basal half. Genital plate broad with posterior apophyses long; the latter decidedly dilated in their basal half. Ostium pouch moderately sclerotized, rather elongate, slightly bulbous, with ventral side projected caudad in a triangle. Ductus bursae narrow, lightly sclerotized throughout. Bursa copulatrix round, no signum present.

#### Comments

This new species is described from a unique female from Puttalam, Ceylon. It is unlike preceding and subsequent species in that the ground colour of the forewing is dull, being distinctly glossy in *C. corticella* (HMPS.), *C. atkinsoni* ZELL., or *C. unicolorella* (ZELL.). Perhaps this species should be associated with *C. endopolia* (HMPS.), however, to little material is available for study to solve the problem. The new species is named for Dr. R. SCHWARZ of Prague.

#### Material examined

Holotype — female: „Puttalam, MACKWOOD Coll. B. M. 1927—341“, GS-1056/Bl., coll. Brit. Mus. (N. H.).

### *Calamotropha venera* sp. n. ♀

[Pl. XXXIII, Fig. 54, Pl. LXV, Fig. 197]

Female. Ocelli vestigial, nearly invisible. Antenna flatly serrate, uniformly pale beige. Labial palpi four times the length of the diameter of the eye; pale light brown, whitened from above; apical joint whitish. Maxillary palpi light brown, mid segment with a brown ring. Face very slightly protruding forward beyond the eye, pale dirty yellowish-beige. Vertex concolorous. Patagia thorax and tegulae pale beige.  $R_1$  in the forewing free. Frenulum of the female triple. Length of forewing 14,5 mm., maximal width 4,8 mm. Costa straight; apex distinctly acute; termen very faintly oblique, straight. Ground colour glossy, light yellowish-brown with veins lightened with whitish. Discal dot very small, dark brown. An almost invisible trace of the subterminal fascia is present. Fringes brownish, nearly totally damaged. Terminal dots absent. Hindwing glossy snow-white with apical area finely shaded with darker. Fringes concolorous with ground colour, rather damaged. Underside glossy; forewing unicolorous beige, hindwing white.

### Female genitalia

Labia large with caudal margins straight; posterior apophyses markedly dilated in their basal half. Genital plate very broad with long anterior apophyses. Ostium pouch short, heavily sclerotized, caudal margins rather irregularly sinuate dentate. Ductus bursae beyond ostium pouch rather broad, further on narrow. Bursa copulatrix round, no signum present.

### Comments

The species is described from a unique female example from India. It is a typical member of the genus. A character of a rather much importance is the absence of the terminal dots in the forewing.

### Material examined

Holotype: „S. India, Gaaty CAMPBELL 1907—367“, GS-1218/BL., coll. Brit. Mus. (N. H.).

### *Calamotropha endopolia* (HAMPSON), comb. n.

[Pl. XXXIII, Fig. 56, Pl. LI, Fig. 131]

1912. *Crambus endopolia* HAMPSON, J. Bomb. Nat. Hist. Soc. 21: 1249, pl. G. f. 30 (sp. n.).

Male. Ocelli absent. Antennae serrate, uniformly pale brownish. Labial palpi about two and one half times the length of the diameter of the eye, brownish. Maxillary palpi brownish, lightened on distal half. Face slightly protruding forward before the eye, broadly rounded; scaling rather damaged. Vertex, thorax and tegulae pale brownish.  $R_1$  in the forewing free. Length of forewing 11 mm., maximal width 4 mm. Ground colour grey-brownish. Discal dot rather poorly defined. Submarginal fascia a narrow, poorly indicated line. Terminal dots present. Fringes rather damaged. Hindwing dirty whitish with fringes concolorous. Underside rather glossy, no markings present.

### Genitalia

Uncus long with terminal part decidedly curved ventrad, tapering to a narrowly rounded tip. Basal long hair present. Gnathos as long as uncus, with terminal part bulbose. Tegumen normal. Valva undivided. Costa distinctly bowed, thickened. Apical part projected dorsally. A fold with a heavily sclerotized narrow process in subcostal area just a little beyond the middle of valva. A group of numerous spines on the inner surface in medial-basal area. Pseudosaccus large, tipped by two very thin and small processes. Vinculum very large, a trifle longer than valva. Aedeagus somewhat shorter than the total armature, slender, delicately bowed ventrad; no cornuti present.

### Comments

The species is as yet known only from the holotype coming from Ceylon. It is a typical member of the genus *Calamotropha* ZELL. The male genitalia show no resemblance to those in any other species of the genus in question.

#### Material examined

Holotype — male: „Ceylon, Wellayawa, GREEN, GS-5686/B. M./BL., coll. Brit. Mus. (N. H.).

### *Calamotropha anticella* (WALKER), comb. n.

[Pl. XXXV, Fig. 62]

1866. *Ancylolomia* ? *anticella* WALKER, List. Spec. Lep. 635: 1751 (sp. n.).

1896. *Crambus anticellus*, HAMPSON, Proc. Zool. Soc. Lond. 1895: 926 (in part).

1928. *Crambus anticellus*, SHIBUYA, J. Fac. Agr. Hokk. Imp. Univ. 22: 40 (in part).

Male.  $R_1$  in the forewing free. Length of forewing 13,5 mm., maximal width 4 mm. Costa rather straight, apex acute, termen nearly vertical to costa, anal angle broadly rounded. Ground colour glossy brown. Discal dot dark, small, but well defined. Veins delineated with pale brownish. Subterminal fascia traceable, a row dark dots; it is obsolete below the costa and above the dorsum. Medial fascia poorly indicated. A few dark terminal dots above dorsum. Fringes glossy unicolorous, a trifle paler than the ground colour. Hindwing glossy greyish, a little lightened in costal area. Under surface of the wing uniformly, glossy.

### Comments

The WALKER holotype lacks the abdomen and the head. It is a female from Natal, Africa. As far I know, no further examples of *C. anticella* (WALK.) have as yet been found. This species has been commonly confused by various workers with other members of the genus under consideration, especially with the Australian *C. dielota* MEYR. HAMPSON (1896a: 926) cites this species from Natal, Travancoore, Ceylon and Pt. Darwin (Australia). Only the record from Natal, based on the WALKER holotype is correct. The remaining records, as well as the records in the Fauna of British India (1896b: 14, Travancoore; Ceylon; Pt. Darwin) are misidentifications of the other species of *Calamotropha* ZELL. In fact, the specimens from Travancoore represent a perfectly distinct species which is described in this paper as *Calamotropha saturnella* sp. n.; the specimen coming from Port Darwin belongs obviously to *C. dielota* MEYR.; the specimens from Ceylon are *C. atkinsoni* ZELL., with exception of one female from Ceylon which belongs to *C. unicolorella* (ZELL.). TURNER (1904: 162) mentions under *C. anticella* (WALK.): „N[orth] A[ustralia], Port Darwin; N[orth] Q[ueensland], Cooktown, Townsville. Also from Ceylon, India

and Africa". The records from Ceylon, India and Africa were certainly based on the HAMPSON records. To clarify the records of TURNER, I have written to Mr. I. F. B. COMMON of the Division of Entomology of the Commonwealth Scientific and Industrial Research Organization in Canberra asking him to dissect the genitalia of the specimens placed under *C. anticella* (WALK.) in the TURNER collection. In reply Mr. I. F. B. COMMON writes: „So far, I have examined the short series of specimens placed under the name *C. anticella* WALK. All but one of these are females, the single male being without abdomen. Four of the females have genitalia which match quite well the drawing of *C. dielota* MEYR. included with your letter, and there seems to be little doubt that they are correctly referred to that species. The male without abdomen may belong here too. It is from Townsville. The remaining three females belong to two other species of *Calamotropha*, rough drawing of the genitalia of which I enclose herewith. I imagine neither of these is *anticella*. The four specimens of *dielota*, missidentified as *anticella* by TURNER, are from Darwin. Thursday Island (in Torres Strait), Cairns and Ingham. There are on specimens under this name from Cooktown". One of the mentioned „Three females..." belongs obviously to *C. atkinsoni* ZELL. as the enclosed sketch of the female genitalia shows. The other female figured in the mentioned letter is supposed by the writer as belonging to a new species. In fact, I believe that *C. anticella* (WALK.) does not occur in the Oriental and Australian Region. — SHIBUYA (1928a: 49) cites *C. anticella* (WALK.) from Formosa; this author also gives the following distribution of *C. anticella* (WALK.): „S. Africa; India; Ceylon; Australia; Sumatra; Formosa". The records from Africa, India, Ceylon and Australia were certainly based on the data of HAMPSON or TURNER, consequently only the record from Africa is correct as referred to the WALKER holotype. The record from Sumatra is based on the HERING paper (1903: 84). E. HERING cites one male of *Crambus anticellus* WALK. from Sumatra. This specimen is newly described as *Calamotropha sumatraella* sp. n.; it is strikingly similar in colour and pattern to *C. dielota* MEYR. I am unable to revise the record from Formosa, however, this is certainly a misidentification of an other species of *Calamotropha* ZELL.

#### Material examined

Holotype — male: „Pt. Natal", „*Ancylolomia* ? *anticella*", coll. Brit. Mus. (N. H.).

#### *Calamotropha janusella* sp. n. ♀

[Pl. LXV, Fig. 64, Pl. LIX, Fig. 170]

Female. Ocelli absent. Antennae uniformly creamy, flatly serrate. Labial palpi nearly three times the length of the diameter of the eye; pale beige. Maxillary palpi brownish on basal half and whitish on distal half. Face barely protruding forward beyond the eye, broadly rounded; white. Vertex creamy. Patagia rubbed. Thorax and tegulae brown.  $R_1$  in the forewing free. Frenu-

lum triple. Length of forewing 12,5 mm., maximal width 3,8 mm. Forewing slender, rather evenly wide throughout. Costa at base slightly arched, then straight; apex acute; termen nearly vertical to costa, straight. Ground colour glossy brown, lightened pale beige in costal and dorsal area. Discal dot small, but rather well visible; medial dot slightly indicated, situated in wing centre. Subterminal fascia well defined, a row of brown dots, obsolete on costa and dorsum; it is broadly excurved in costal part, obliquely straight, without projection above dorsum. Terminal dots distinct, eight in number. Veins outlined with paler in outer area. Fringes glossy, unicolorous, light brown. Hindwing glossy, semihyaline white with fringes concolorous. Under surface: Forewing glossy, uniformly pale beige, with discal dot and terminal dot both slightly indicated; hindwing white, glossy, unicolorous.

#### Female genitalia

Labia with caudal margins straight, basal thickenings narrow but distinct. Posterior apophyses rather distinctly projected ventrally midway from their apices; basal portion broader than terminal portion. Genital plate broad, anterior apophyses slender, dilated only at their very bases. Ostium pouch strongly coalescent with genital palte; heavily sclerotized, short but broad; several minute ribs from caudal edge. Ductus bursae beyond ostium pouch broad, minutely wrinkled, then slender; lightly sclerotized throughout. Bursa copulatrix larger, rather ovate; no signum present.

#### Comments

The new species is described from a unique female from Salakle, South Abyssinia. It is rather similar to the preceding species, however. I am unable to state whether the two are conspecific, as the type of *C. anticella* (WALK.) lacks the abdomen.

#### Material examined

Holotype — female: „Salakle, Ganale R., 6—8. June [19]01 (C. V. ERLANGEN)“, GS-1232/Bl., coll. Brit. Mus. (N. H.).

#### *Calamotropha diakonoffi* sp. n. ♀

[Pl. XXXVI, Fig. 68, Pl. LXX, Fig. 217]

Female. Ocelli absent. Antennae uniformly pale brownish. Labial palpi three and one half the length of the diameter of eye; pale brownish. Maxillary palpi pale brownish on basal half and creamy on distal half. Face pale beige-creamy; rather distinctly protruding forward beyond the eye; broadly rounded. Patagia light brown at sides, creamy centrally. Tegulae light brown. Scales on thorax damaged. Frenulum triple. Length of forewing 14,5 mm., maximal width 4,7 mm.  $R_1$  free. Costa straight except at base, which is curved. Apex decidedly acuminate. Termen straight, distinctly oblique. Ground colour

brown, glossy. Discal dot distinct but small. Median dot absent. Subterminal fascia traceable, slightly excurved. Fringes rather paler than ground colour, uniform, glossy. Terminal dots rather distinct, brown. Hindwing glossy white with fringes concolorous. Under surface: Forewing pale brownish with discal dot traceable; hindwing rather concolorous with upperside.

### Female genitalia

Very large. Labia with caudal margins nearly straight; posterior apophyses very long, distinctly dilated with edges sinuate in basal half. Genital plate long with anterior apophyses very narrow, straight, triangularly dilated in basal portions. Ostium pouch linked to genital plate with a narrow, rather heavily sclerotized bridge; large, helmet-shaped, very heavily sclerotized; dorsal portion of a peculiar and complicate armature as is shown in the figure. Ductus bursae very long, lightly sclerotized throughout, slightly expanding near bursa copulatrix. The latter round; no signum present.

### Comments

This new species is described from a unique female specimen from Natal, Africa. I place it in *Calamotropha dielota* MEYR.-group, however, such an opinion may be incorrect as the male of the new species is as yet unknown. Only the discovery of the male and the examination of its genitalia might solve this problem. *C. diaconoffi* sp. n. is very distinctive on both facies and genitalia. In facies very characteristic are: The abnormally great size, the distinctly oblique termen of the forewing and the absence of the medial dot in the forewing. The armature of the genitalia is unlike any other species of the genus *Calamotropha* ZELL. as is shown in the figures.

This species is named in honour of Dr. A. DIAKONOFF of Rijksmuseum van Natuurlijke Historie in Amsterdam.

### Material examined

Holotype — female: „1900. Natal, Pinetown. G. M. H. BURN HEYNE“, GS-1661/BL., author's coll.

### *Calamotropha torpidella* (ZELLER), comb. n.

[Pl. XXXVI, Fig. 65, Pl. LXX, Fig. 220]

1852. *Chilo torpidellus* ZELLER, K. Swenska Vetensk. Akad. Handl. 1852: 69 (sp. n.).

1863. *Chilo torpidellus* ZELLER, Chil. Cramb. Gen. Spec. p. 7.

Ocelli completely atrophied. Antennae glossy, dark brown, uniform. Labial palpi three and one half the length of the diameter of the eye, brown; whitened from above. Maxillary palpi brown on basal half and white on distal half. Face barely protruding forward beyond the eye; creamy. Vertex concolorous. Patagia brown-beige. Tegulae brown. Thorax beige. Frenulum of the female triple. Length of forewing 12,5 mm., maximal width 4 mm.  $R_1$  runs freely.

Costa slightly bowed, very narrowly bordered with white, apex acute, termen nearly vertical to costa. Ground colour distinctly glossy, nut-brown. Discal dot very small. Medial dot in form of a tiny shade. Terminal dots well defined from apex up to anal angle. No transverse markings present. Fringes decidedly glossy, lighter than ground colour. Hindwing snow-white with apex very slightly tinged with yellowish; fringes concolorous with the ground. Under surface: Forewing glossy, pale brownish with discal dot distinct and terminal dots rather well defined, but unsharp. Hindwing white, glossy, with costal area tinged with beige-yellowish.

#### Female genitalia

Labia with caudal margins nearly straight; basal strengthenings narrow; posterior apophyses slightly dilated in basal half, curved. Genital plate rather normal with anterior apophyses narrow, slightly bowed. Ostium pouch very heavily sclerotized in form of a long bowl; proximal border well marked; proximal portion surrounded by a bulbous membrane. Ductus bursae lightly sclerotized, wrinkled. No signum on bursa copulatrix.

#### Comments

This species was described from a unique female specimen from Southern Africa. Fortunately I have found this female in the collection at the Naturhistoriska Riksmuseet in Stockholm. This species, similarly as *Calamotropha unicorella* (ZELL.), was placed by ZELLER under the genus *Chilo* ZCK. The examination of the wing venation, the armature of the head and the genitalia point to place the ZELLER species in the genus under consideration. *Calamotropha torpidella* (ZELL.) is a typical member of the genus. It resembles somewhat *C. abjectella* SNELL. and allies, but is perfectly distinct on the genitalia; in addition, very characteristic is the white bordering of the costa of the forewing, a character not met with in the other allied species. — A far I know, this species is as yet known only from the ZELLER holotypes.

#### Material examined

Holotype — female: „*Chilo torpidellus*“, „459“, „Caffraria“, „J. WAHLB[ERG]“, GS-1585/BL., coll. Naturhistoriska Riksmuseet, Stockholm.

#### *Calamotropha abjectella* SNELLEN

[Pl. XXXVII, Fig. 69]

1872. *Calamotropha abjectella* SNELLEN, Tijd. Ent. 15: 101, pl. VIII, f. 4 (sp. n.).  
 1893. *Calamotropha Abiectella*, PAGENSTECHER, Jahrb. Hamb. Wiss. Anst. 10: 256.  
 1896. *Calamotropha abjectella*, HAMPSON, Proc. Zool. Soc. Lond. 1895: 939.

Female. Ocelli absent. Antennae in the only studied specimen (holotype) damaged. Labial palpi about three times the length of the diameter of the eye, pale beige. Face not protruding forward beyond the eye, rather brown

(scaling rather damaged). Patagia brown. Tegulae brown. Scaling on thorax damaged.  $R_1$  in the forewing runs freely. Frenulum triple. Costa nearly straight, apex decidedly acute; termen barely concave below apex, slightly oblique. Ground colour slightly glossy, brown. Discal dot very small but well visible. Median dot larger, rather ill defined. Subterminal fascia a delicate row of dark scales; dorsal projection hardly marked. Terminal dots well visible from apex up to anal angle. Fringes almost concolorous with ground. Hindwing rather glossy, whitish with fringes concolorous. Under surface: Forewing strongly glossy, uniformly pale beige with discal dot traceable; marginal dots absent; fringes concolorous; hindwing rather concolorous with upper surface.

#### Female genitalia

Labia with caudal margins rather straight; posterior apophyses very long, dilated in basal half. Genital plate normal with anterior apophyses narrow and long. Ostium pouch heavily sclerotized, large, distinctly tapering triangularly caudad. Ductus bursae lightly sclerotized. No signum on bursa copulatrix.

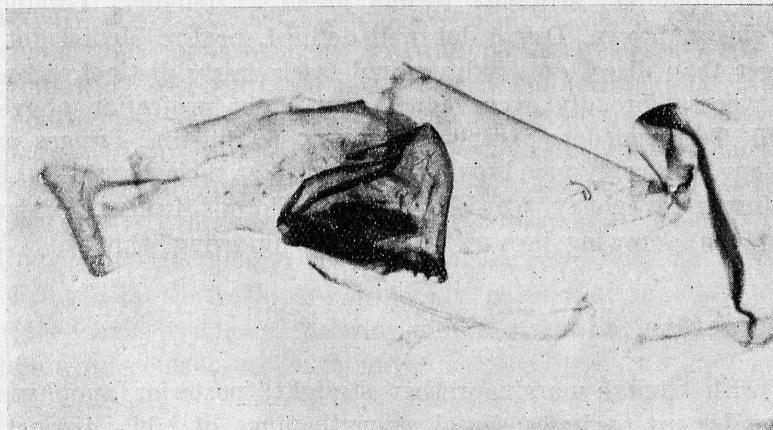


Fig. A. *Calamotropha abjectella* Snell. Female genitalia. GS-3383.

#### Comments

This species has hitherto been in a very strong confusion. It was described from a unique female specimen from African Guinea. However, some subsequent authors considered the distribution of this species incorrectly to be New Guinea. As far I know, *C. abjectella* SNELL. is as yet known only from the holotype. PAGENSTECHER cites this species from Quilimane, Afrika (1893: 256), however, this record needs verification. I have had no opportunity to state where are specimens reported by PAGENSTECHER. SNELLEN cites two specimens of *C. abjectella* SNELL. (1884: 54) from Celebes, however, this is

an apparent misidentification of other species of the genus *Calamotropha* ZELL. — Because of the facies *Calamotropha abjectella* SNELL. comes rather near the species of the *C. dielota* MEYR.-group.

#### Material examined

Holotype — female, Lower Guinea, Afrika, GS-3383/Mus. Natuurl. Hist. Leiden, coll. Museum v. Natuurlijke Historie, Leiden.

#### *Calamotropha lattini* sp. n. ♀

[Pl. XXXVI, Fig. 66, Pl. LXVII, Fig. 187]

Female. Ocelli absent. Antennae damaged. Labial palpi three times the length of the diameter of the eye; pale beige, tinged with brown on apical joint. Maxillary palpi white on basal half and creamy on distal half. Face slightly protruding forward beyond the eye, broadly rounded; white. Vertex whitish creamy. Patagia light brownish, whitened in central area. Thorax and tegulae brownish.  $R_1$  in the forewing free. Frenulum triple. Length of forewing 10,5 mm., maximal width 3,6 mm. Costa very gently arched; apex acute; termen fairly oblique, straight; tornus broadly rounded. Ground colour distinctly glossy, brown. Discal dot well defined, brown. Medial dot distinct, rather larger than discal dot. Subterminal fascia fairly distinct, a brown line, obsolete at costa, broadly excurved; a very slight projection above dorsum is indicated. Terminal dots distinct from costa to dorsum. Fringes paler than ground colour, uniformly pale brownish, whitened at their very bases. Hindwing rather transparent, glossy whitish with concolorous fringes. Under surface glossy, uniform; forewing brownish-yellowish; hindwing white.

#### Female genitalia

Labia with caudal margins rather straight; posterior apophyses gently arched, slender up to bases; basal strengthenings of labia distinct. Genital plate normal, anterior apophyses moderately long. Ostium pouch rather well coalescent with genital plate, heavily sclerotized, minutely clothed with spikes, proportionately small, with dorsal-terminal margin markedly notched. Ductus bursae narrow, lightly sclerotized throughout; bursa copulatrix elongate, no signum present.

#### Comments

*C. lattini* sp. n. is described from a unique female specimen from Ft. Johnston, Nyasaland. Because of the pattern it resembles somewhat *C. robustella* SNELL., but is decidedly smaller. The genitalia of the new species are very distinct and do not resemble those of any other species of *Calamotropha* ZELL. *C. lattini*

sp. n. is a typical member of the genus under consideration. The species is named in honour of Prof. Dr. G. DE LATTIN of the Zoologisches Institut des Saarlandes, Saarbrücken.

#### Material examined

Holotype — female: „Ft. Johnston, Nyasaland, Jan. Febr. [18]96, Dr. P. RENDALL“, GS-1222/Br., coll. Brit. Mus. (N. H.).

#### *Calamotropha martini* sp. n.

[Pl. XXXVII, Fig. 71, 72, Pl. LII, Fig. 134, Pl. LXX, Fig. 219]

Ocelli absent. Antennae uniformly brown, serrate. Labial palpi four times the length of the diameter of the eye; dark brown, slightly lightened from above. Maxillary palpi dark brown, unicolorous. Face broadly rounded, produced forward, fairly protruding beyond the eye; rather light brown. Vertex dark brown. Patagia dark brown on sides, somewhat lightened centrally. Thorax and tegulae dark brown. Frenulum of the female triple.  $R_1$  in the forewing free. Length of forewing: male 11 mm., female 18 mm., maximal width of male 4 mm., of female 6 mm. Costa arched at base, further on nearly straight. Apex markedly acute, termen straight, vertical to costa, minutely sinuate. Ground colour dull nut-brown. A longitudinal dark stripe with indistinct margins from wing base, diffused near termen. Subterminal fascia a slightly indicated, dark line; upper portion broadly excurved, lower portion oblique on dorsum. Discal dot in the female is very small, in the male larger. Several dark brown small specks beyond discal dot. Medial dot is not indicated. Terminal dots poorly defined, small. Fringes somewhat paler than ground colour. Hindwing rather glossy, grey; termen bordered with dark below apex, concave. Fringes in the male are decidedly paler than the ground colour. Under surface markedly glossy, forewing uniformly brown, paler than on upper surface; hindwing concolorous with upper surface.

#### Male genitalia

Uncus long, slender, apical portion decidedly curved, sharply pointed; several typical long hairs situated on a rather long, extending fold on either side of basal part. Gnathos equal to length of uncus; it is decidedly angled in basal portion, which is rounded, slightly bulbous. Tegumen normal with margins thickened. Valva undivided, elongate; costa lacks hair, straight except for terminal part, which is curved; apical portion hairy, projected in a triangle; anal-ventral angle broadly notched, somewhat similar as in *C. oblitterans* (WALK.). A distinct stout spine extending inwardly from apical portion. Membrana valvae interna notched from base to near apex of valva above middle of the valva width. Lower part clothed with numerous fairly short, stout, thin bristles. Pseudosaccus well developed. Vinculum decidedly shorter

than valva, broad, truncate cephalad. Aedeagus markedly bowed ventrad, faintly narrowed apically, decidedly shorter than the whole armature; vesica scobinate, no cornutus present.

### Female genitalia

Unfortunately the female genitalia of the unique female of this species are strongly damaged. The only preserved part shown in the figure.

### Comments

The new species is described from one specimen of each sex from Uganda. It is a typical member of *Calamotropha* ZELL. being very distinct by the very dark colour.

The species is named in honour of Mr. E. L. MARTIN of the Geological Survey and Museum in London.

### Material examined

Holotype — male: „Uganda, Ngora, Magu Swamp. 29. V. 1956. W. R. INGRAM. ex papyrus“, GS-1639/B.L., coll. Brit. Mus. (N. H.); allotype — female: GS-1640/B.L., Uganda, Ngora, coll. Brit. Mus. (N. H.).

### *Calamotropha fuscivittalis* (HAMPSON), comb. n.

[Pl. XXXV, Fig. 63, Pl. LXVI, Fig. 201]

1910. *Crambus fuscivittalis* HAMPSON, Proc. Zool. Soc. Lond. 1910: 490, pl. XL, f. 1 (sp. n.)

Female. Ocelli absent. Antennae unicolorous brown. Labial palpi four times the length of the diameter of the eye. Maxillary palpi brown, lightened in the terminal portion. Face very slightly protruding forward beyond the eye; rather pale brownish. Vertex concolorous with face. Patagia, thorax and tegulae bronzy-brown, glossy, concolorous with forewing. The latter is very slender, evenly wide nearly throughout. Costa barely visibly arched, at base more than otherwise; apex decidedly acute; termen rather obliquely straight; tornus broadly rounded.  $R_1$  runs freely. Frenulum triple. Ground colour rather, glossy, bronzy-brown, lightened along costa and dorsal area. The paler costal area is darkened at the wing base. Discal dot well defined. No transverse lines present. Fringes uniform, concolorous with ground colour. Terminal dots absent. Hindwing glossy, somewhat transparent, whitish-creamy; fringes concolorous. Under surface shiny; forewing brown, but somewhat paler than on the upper surface; hindwing with costal and apical area darkened with brown-grey.

### Genitalia

Labia with caudal margins rather straight, posterior apophyses decidedly dilated midway from apices, their bases rather triangular. Genital plate normal,

anterior apophyses long. Ostium pouch of a peculiar armature, it is strongly produced dorsad, large, heavily sclerotized, with some folds; dorsal-caudal portion is produced in a semidome with a corneous point situated centrally; proximal-dorsal side semiglobate, clothed with numerous, minute spines. Ductus bursae lightly sclerotized throughout, narrow. Bursa copulatrix large, rather elongate; no signum present.

### Comments

*C. fuscivittalis* (HMPS.) was described from a unique female specimen from Rhodesia. As far as I know no further specimens of this remarkable species have as yet been found. The holotype is in the collection at the British Museum (N. H.) in London. The species is very distinctive and easily distinguishable by the very slender forewing, the absence of transverse markings and terminal dots. It is a typical member of the genus as the absence of ocelli, triple frenulum and armature of the genitalia show. The species shows no great resemblance to other species of the genus *Calamotropha* ZELL.

### Material examined

Holotype — female: „Serenje Dist. N. E. Rhodesia. 25. XII. 1907. about 4500 ft.“, „NEAVE Coll., 1907—230“, GS-5520/B. M./Bl., coll. Brit. Mus. (N. H.).

### *Calamotropha fuscilineatella* (LUCAS)

[Pl. XXXVI, Fig. 67, Pl. LVI, Fig. 156]

1938. *Crambus fuscilineatellus* LUCAS, Bull. Soc. Ent. France **43**: 183 (sp. n.).

1960. *Calamotropha orontella*, BŁESZYŃSKI (nec RAGONOT), Pol. Pis. Ent., **30**: 28, fig. 1; 2 (♂ genit.) male.

Male. Ocelli absent. Antenna light brown, slightly glossy, of a basic *Calamotropha*-shape. Labial palpi about three times the length of the diameter of the eye, brownish. Maxillary palpi concolorous with the labial palpi. Face rather slightly protruding forward before the eye, broadly rounded, creamy. Vertex white, clothed with erected scales; the latter in places darkened terminally. Thorax and tegulae light brown.  $R_1$  in the forewing runs freely. Length of forewing 8 mm., width 3,5 mm. Costa slightly curved, apex acuminate, termen nearly straight, rather vertical to costa; anal angle broadly rounded. Ground colour light brown, darkened in places. Outer area narrowly light and dark striped. Discal dot black and distinct. Subterminal fascia traceable. Medial dot absent. Fringes rather glossy, brownish, lightened at their bases; several darker streaks are present. Hindwing dirty white, slightly glossy; termen edged with darker. Fringes concolorous with the ground colour. Under surface of the forewing brown, that of the hindwing whitish.

### Male genitalia

Uncus long and slender, rather curved ventrad, swollen at the very base; apex pointed. Gnathos very slender, straight, rounded apically, distinctly less sclerotized than uncus. Tegumen normal. Valva undivided; costa thickened to near apex. A heavily sclerotized fold below costa from base to beyond middle. Terminal margin bowed. Ventral margin decidedly concave. Pseudosaccus rather short. Vinculum proportionately short. Aedeagus nearly evenly wide throughout, equal to length of total armature. Vesica armed with two rather large, tapering caudad cornuti.

### Comments

This species was described from a unique male specimen from Morocco. In my recent article (1960b: 28) I have incorrectly sank this species as a synonym of *Calamotropha orontella* RAG. This was due to the lack of male and female specimens coming from the same locality. The two species are rather similar in their facies. Only the material of several males and females from Syria and determined in the collection of OSTHELDER as belonging to „*Crambus leucaniellus* ZERNY“ has clarified the situation (discussion see at *Calamotropha hierichuntica* ZELL.).

As far I know no further examples of the species under consideration have as yet been found.

### Material examined

Holotype — male: „Makedya, 12. VIII. [19]36“, „Maroc coll. RUNGS“, „Type“, „*C. fusci-lineatellus* Don. LUCAS“, coll. Mus. Nat. Hist. Nat., Paris.

### *Calamotropha hierichuntica* ZELLER

[Pl. XXXVIII, Fig. 73, Pl. XL, Fig. 81, 82, Pl. LIV, Fig. 145, Pl. LXV, Fig. 196]

- 1867. *Calamotropha hierichuntica* ZELLER (in STANTON), Ent. Ztg., Stettin **28**: 368 (sp. n.).
- ?1876. *Calamotropha hierochuntica*, CHRISTOPH, Horae Soc. Ent. Ross. **12**: 221.
- 1895. *Calamotropha orontella* RAGONOT, Bull. Soc. Ent. France **1895**: 100 (sp. n.). Syn. n.
- 1896. *Crambus hierochunticus*, HAMPSON, Proc. Zool. Soc. Lond. **1895**: 926.
- 1901. *Crambus hierochunticus*, STAUDINGER & REBEL, Cat. **2**: 2.
- 1901. *Crambus orontellus*, STAUDINGER & REBEL, Cat. **2**: 2.
- 1914. *Crambus leucaniellus* ZERNY, Ann. Hofmus. Wien **28**: 299 (sp. n.). Syn. n.
- 1935. *Crambus leucaniellus*, OSTHELDER, Mitt. Münchn. ent. Ges. **24**: 77.
- 1939. *Calamotropha hierichuntica*, ELLISON & WILTSHERE, Tr. Ent. Soc. Lond. **88**: 50.
- 1960. *Calamotropha orontella*, BŁESZYŃSKI, Pol. Pis. Ent. **30**: 28, f. 3 (♀ genit.) (♀).

Ocelli absent. Antennae light brownish, of a basic *Calamotropha*-shape. Labial palpi slender, brownish. Maxillary palpi concolorous. Face rather slightly protruding forward beyond the eye, broadly rounded, creamy. Vertex white. Patagia brown at sides, whitened centrally. Thorax and tegulae brownish.  $R_1$  in the forewing is free. Length of forewing about 12 mm., ma-

ximal width about 5 mm. Costa straight except at the very base; apex acute; termen straight in male and rather oblique in female. Frenulum of the female triple. Ground colour slightly glossy brown. Veins outlined with creamy. A longitudinal, creamy stripe with indistinct margins above middle of wing from base to termen. Median dot absent. Discal dot small but well visible. Termen edged with darker. Fringes glossy white at their bases and brownish at their ends with a narrow, dividing line. Hindwing greyish, lightened in the basal and dorsal area, glossy; termen very delicately edged with brown; fringes dirty creamy, glossy. Under surface: Forewing glossy, uniformly brown, fringes paler basally; hindwing concolorous with the upperside.

#### Male genitalia

Uncus and gnathos very long and slender, of equal length. Uncus slightly arched, gradually tapering to a sharply pointed tip; several typical, long basal hairs are present. Tegumen clothed with hair on ventral side. Valva undivided, rather rhomboidal, rather heavily sclerotized; costa lacks hair, almost straight, produced caudally in a rounded projection; caudal margin obliquely sinuate, poorly clothed with hair; ventral margin fairly straight, not differentiated; ventral-caudal area clothed with not numerous, rather short hairs. Pseudosaccus is a narrow pouch. Vinculum rather normal. Aedeagus slender, evenly wide throughout, a trifle shorter than the total armature; a heavily sclerotized, rather rounded, minutely dentate caudally plate at apex is present. No cornuti in vesica present.

#### Female genitalia

Labia with caudal margins straight; posterior apophyses very long, decidedly triangularly dilated with edges dentate in basal half. Genital plate broad, anterior apophyses triangularly dilated in basal half. Ostium pouch heavily sclerotized with terminal portion narrowed and apex inbent. Ductus bursae slender, lightly sclerotized throughout. Bursa copulatrix elongate, no signum present.

#### Comments

This species was described from a unique male specimen from Palestine. As far I know, nearly all subsequent records on this species are misidentifications of *Pseudobissetia terrestrella* (CHRIST.). I have verified the data of CARADJA (1916), of ZERNY (1914) and of OSTHELDER (1935: 76, 1941, pl. XV, f. 78). All these data are based on typical specimens of *Pseudobissetia terrestrella* (CHRIST.). The situation has hitherto been quite unclear also to me. I have not hitherto seen a pair of *Calamotropha hierichuntica* ZELL. taken in one locality. It was due to my error in considering *C. fuscilineatella* (LUCAS) as the male of *C. orontella* RAG. In my recent paper (1960b: 28) I sank the former

under the synonyms of the latter. Only the study of a series specimens published by OSTHELDER (1935: 77) as belonging to „*Crambus leucaniellus* ZERNY“ has clarified definitely this so confused problem. So, *Calamotropha orontella* RAG. described from a unique female from Akbès, Syria is an obvious synonym of *Calamotropha hierichuntica* ZELL. My opinion (1960b: 28) in the considering *Crambus leucaniellus* ZERNY as a synonym of *Calamotropha orontella* RAG. is correct. *Crambus leucaniellus* ZERNY described from two females, one of these taken in Akbès, Syria and the other in Ammanus, Syria, is undoubtedly conspecific with the species under consideration. I designate the female from Akbès as the lectotype. *Calamotropha fuscilineatella* (LUCAS) considered as a synonym of *Calamotropha orontella* RAG. is a distinct species, however, it is very close on facies to the species in question. The OSTHELDER specimens from Syria (Marasch) published as „*Crambus leucaniellus* ZERNY“ (1935: 77) were correctly determined and are perfectly identical with the ZELLER holotype of his *Calamotropha hierichuntica*. ELLISON and WILTSHERE (1939: 59) discussed this species with regard to the determination of their „*Diatraea luteella* MOTSCH.“ as belonging to *Calamotropha hierichuntica* ZELL.

Some authors used incorrectly a wrong spelling of the name: „*hierochuntica*“.

The record of AMSEL (1933) on *C. hierichuntica* ZELL. from Palestine is a misidentification of *Cephis canicostalis* (HMPS.).

I have not found any specimen determined as *C. hierichuntica* ZELL. in the CHRISTOPH collection in Leningrad.

*Calamotropha hierichuntica* ZELL. is a typical member of the genus *Calamotropha* ZELL. As is mentioned above, it comes near *C. fuscilineatella* (LUCAS), however, the two species are perfectly distinct on their male genitalia (the female of the latter is as yet unknown).

#### Material examined

Holotype — male: „Palestine. 84: 86“, GS-2914/B. M., coll. Brit. Mus. (N. H.); holotype of *Calamotropha orontella* RAG., Akbès, Syria, coll. Nat. Mus. Hist. Nat., Paris; lectotype (female) and one female lectotypoid of *Crambus leucaniellus* ZERNY, Akbès and Ammanus, Syria, GS-3705/BŁ., GS-3706/BŁ., coll. Nathist. Mus., Vienna; two males and four females from North Syria — Ammanus and Marasch, coll. Zoologische Sammlung des Bayerischen Staates, München.

#### *Calamotropha bradleyi* BŁESZYŃSKI

[Pl. XXXVIII, Fig. 75, 76, Pl. LIV, Fig. 144, Pl. LXX, Fig. 218]

1960. *Calamotropha bradleyi* BŁESZYŃSKI, Pol. Pis. Ent., 30: 16, pl. II, f. 6 (sp. n.).

Ocelli absent. Antennae of male distinctly serrate and of female flatly serrate; uniformly brown in both sexes. Labial palpi nearly three times the length of the diameter of the eye; brown and of cream colour from above.

Maxillary palpi brown, lightened pale beige distally. Face distinctly produced forward with a corneous point; pale creamy-beige. Vertex in male pale beige, shaded with brown centrally, that in female white, slightly tinged pale beige centrally. Patagia in male brown at sides and creamy centrally; those in female pale beige at sides and barely lightened centrally. Thorax and tegulae brown in male and pale beige in female.  $R_1$  in the forewing free. Frenulum of the female triple. Length of forewing in male 12 mm., in female 15 mm.; maximal width in male 4,5 mm., in female 5,7 mm. Costa straight except at base; apex acute; termen vertical to costa in male and rather oblique in female. Ground colour pale beige, thickly suffused with brown scales (the suffusion in female considerably lesser than in male), especially at the very base of wing and outer area. Veins and intervenular spaces delineated with pale beige-creamy. Subterminal fascia traceable; upper portion broadly excurved, lower portion obliquely straight to dorsum. A barely visible medial dot present. No discal dot present. Terminal dots well defined, seven in number. Fringes slightly glossy brown, whitish at their very bases. Hindwing in male glossy, dirty creamy, shaded with brownish in outer area; fringes glossy whitish; that in female glossy creamy with fringes glossy whitish. Under surface: Forewing uniformly glossy brownish, in male darker than in female; hindwing rather concolorous with upper side, however, with costal area tinged with pale beige.

#### Male genitalia

Uncus rather broad, terminally bifurcate into two tapering lobes with tips pointed. Typical long, basal hairs present. Gnathos barely longer than uncus, narrow, with apex large, bulbous. Tegumen normal. Valva with a distinct, large pars basalis; the latter heavily sclerotized, broad, from two-thirds its length abruptly tapering to a point. Cucullus a long, slender, lightly sclerotized, hairy lobe. Sacculus not differentiated. Pseudosaccus well developed. Vinculum long, proportionately fairly narrow, rather obliquely truncate terminally. Aedeagus large, rather longer than the total armature, evenly wide throughout except at base; several moderate, rather straight tapering cornuti towards the apex present.

#### Female genitalia

Labia large with caudal margins decidedly concave; posterior apophyses strongly dilated in basal half. Genital plate proportionately narrow with rather short apophyses; the latter situated rather nearer ostium pouch than in other species of the genus. Ostium pouch heavily sclerotized, broad, folded; the border of the strong sclerotization is sharp. Ductus bursae lightly sclerotized throughout, looped beyond ostium pouch. Bursa copulatrix with no signum.

### Comments

The species was described from a unique male specimen from Cape Colony, Africa. One female specimen from Natal is identified as conspecific with the above mentioned male. However, the association of the two may be erroneous as too little material is available for study. Because of its considerable similarity to *C. hierichuntica* ZELL. both above mentioned specimens were placed under that species in the main collection at the British Museum (N. H.) in London. However, the two species are easily separable as follows: Face barely protruding forward beyond the eye in *C. hierichuntica* ZELL., but being decidedly conical and pointed in *C. bradleyi* BŁESZ.; discal dot present in the former and absent in the latter; medial dot absent in the former and present in the latter. The male genitalia of the two are different in practically each detail as is shown in the figures. The female genitalia of *C. hierichuntica* ZELL. are also distinct. The ranges of both *C. bradleyi* BŁESZ. and *C. hierichuntica* ZELL. are much remote from each another and do not overlap. The latter is known from Near East.

### Material examined

Holotype — male: „C. Colony Table Mts. II. 1901. 1901—142“, GS-959/BŁ., coll. Brit. Mus. (N. H.); one female: „Natal, Durban“, „STAINTON Coll. 93: 134“, GS-1101/BŁ., coll. Brit. Mus. (N. H.).

### *Calamotropha stachi* sp. n. ♀

[Pl. XXXVIII, Fig. 74]

Ocelli absent. Antenna nearly totally damaged, the base uniformly pale brown, flatly serrate. Labial palpi damaged. Maxillary palpi light brown, whitened terminally. Face broadly rounded, moderately protruding forward beyond the eye; the only preserved scales are white. Vertex white, barely darkened with beige centrally. Patagia beige at side and whitish-creamy centrally. Thorax and tegulae beige. Forewing.  $R_1$  coincident with  $Sc$ . Frenulum triple. Length 14 mm., maximal width 5 mm. Costa slightly arched, apex acute, termen straight and slightly oblique. Colour and markings rather similar as in preceding species. Abdomen in the only examined specimen lacking.

### Comments

The new species is described from a unique female from Umkomaas, South Africa. It is distinguishable from *C. bradleyi* BŁESZ., by the rounded, not conical face and the coincidence of  $R_1$  and  $Sc$ . in the forewing. The latter character separates also *C. stachi* sp. n. from *C. hierichuntia* ZELL. *C. stachi* sp. n. is a typical representative of the genus. Unfortunately the holotype lacks the

abdomen. The new species is named in honour of Prof. Dr. Jan STACH, of the Institute of Zoology of the Polish Academy of Sciences, Branch in Kraków.

#### Material examined

Holotype — female: „Umkomaas. 20. I. [19]14, A. J. JANSE“, coll. Brit. Mus. (N. H.).

#### *Calamotropha niveicostella* (HAMPSON), comb. n.

[Pl. XLII, Fig. 89, Pl. LXV, Fig. 199]

1919. *Crambus niveicostellus* HAMPSON, Ann. Mag. Nat. Hist. (9) 3: 280 (sp. n.).

Female. Ocelli vestigial, nearly invisible, or absent. Antenna serrate, uniformly brownish. Labial palpi four times the length of the diameter of the eye; brown yellowish and whitened from above. Maxillary palpi brown on basal half and white on terminal half. Face slightly protruding forward beyond the eye; white. Vertex white. Thorax, patagia and tegulae in both examined specimens somewhat rubbed, rather brownish.  $R_1$  in the forewing free. Frenulum triple. Length of forewing 14 mm., maximal width 4,5 mm. Costa arched at the very base, further on straight; apex acute; termen straight, nearly vertical to costa. Ground colour glossy, light brown-golden. Costa edged with a sharply defined, white stripe, gradually tapering up to alar apex. The costal stripe is edged from below with a uniformly brown dark stripe, obsolete in the outer area of the wing. Veins lightly delineated, similar pale yellowish lines in the intervenular spaces. Dorsal area somewhat whitened. No traces of discal dot; medial dot and transverse markings absent. Terminal dots from alar apex to anal angle. Fringes glossy, distinctly paler than the ground colour, whitened at their bases. Hind wing pure white, glossy, with fringes concolorous. Under surface of the forewing glossy, uniformly creamy, that of the hindwing rather concolorous with the upper surface.

#### Female genitalia

Labia with caudal margins markedly concave, posterior apophyses rather decidedly dilated midway from bases; the latter broad, rather heavily sclerotized. Genital palte normal, linked to ostium pouch with a transparent, weak membrane. Ostium pouch moderately sclerotized, slightly longitudinally wrinkled, gradually tapering to ductus bursae. The latter lightly sclerotized throughout. Bursa copulatrix strongly elongate, as long as ductus bursae; no signum present.

## Comments

The species was described from a unique female from British East Africa. It is rather close to the next species. Both *C. niveicostella* (Hmps.) and *C. xanthypa* sp. n. form a distinct group among the members of the genus. The differences distinguishing the two are discussed below. As far as I know, besides the holotype only one female from Natal has as yet been found.

## Material examined

Holotype: „Shambe. 1. XII. [19]01. B. E. Africa, C. S. BETTON, 1902—55“, GS-5559/B. M./BL., female, coll. Brit. Mus. (N. H.); one female from Natal, GS-1536/BL., Coll. Naturhistoriska Riksmusset in Stockholm.

*Calamotropha xanthypa* sp. n. ♀

[Pl. XLII, Fig. 90, Pl. LXV, Fig. 198]

Female. Ocelli absent. Antennae serrate, uniformly creamy. Labial palpi more than twice the length of the diameter of the eye; yellowish. Maxillary palpi yellow brownish on basal half and white on distal half. Face rather distinctly produced forward, distinctly protruding forward beyond the eye; broadly rounded; scaling unfortunately rubbed. Vertex whitish. Patagia, thorax and tegulae pale beige, suffused with white.  $R_1$  in the forewing free, Frenulum triple. Length of forewing 13,5 mm., maximal width 4,5 mm. Costa delicately arched; at base not more than otherwise; apex acute; termen rather straight, nearly vertical to costa. Scaling somewhat rubbed. Ground colour glossy, rather pale golden-brown. Costa edged with a whitish stripe tapering posteriorly and indistinctly bordered from below. Veins slightly outlined with pale yellowish. No trace of transverse markings. Discal and medial dot, as well as the terminal dots absent. Fringes concolorous with ground colour. Hindwing glossy white, with fringes concolorous. Under surface: Fore wing glossy, uniformly pale beige with no markings; hindwing glossy, uniformly white.

## Female genitalia

Labia with caudal margins rather straight; posterior apophyses slender, gently dilated in their basal portion; the basal strengthenings of labia occup, nearly their total bases. Genital plate normal, anterior apophyses long. Thy former linked to ostium pouch with a narrow, rather heavily sclerotized, shore bridge. Ostium pouch heavily sclerotized, more then twice as long as widest with some longitudinal folds. Ductus bursae as wide as ostium pouch, transparent, without any differentiation. Bursa copulatrix considerably elongate, tapering caudad. No signum present.

## Comments

The new species is described from a unique female specimen from Natal. It is rather closely allied to the preceding species being, however, specifically perfectly distinct in that the face is produced forward [only slightly protruding forward beyond the eye in *C. niveicostella* (HMPS.)]. In addition, the dark bordering of the costal white stripe that appears in the preceding species, is absent in the new species. Ostium pouch in the new species is much more heavily sclerotized than in *C. niveicostella* (HMPS.). As in mentioned above, the two form a rather distinct group among the species of *Calamotropha* ZELL.

### Material examined

Holotype: „Natal. A. J. SPILLER“, GS-1574/BL., coll. Brit. Mus. (N. H.).

### *Calamotropha danutae* sp. n. ♀

[Pl. XXXIX, Fig. 78, Pl. LXIX, Fig. 216]

Female. Ocelli absent. Antennae slightly serrate, uniformly brownish. Labial palpi slender, four times the length of the diameter of the eye; light brown, with mid joint white from above. Maxillary palpi brown on basal half and white on distal half. Face scarcely protruding forward beyond the eye; white. Vertex concolorous with face. Patagia brown at sides and white in central area. Thorax white; tegulae brown.  $R_1$  in the forewing free. Frenulum double. Length of forewing 11 mm., maximal width 3,3 mm. Costa rather distinctly arched, apex decidedly acute, termen oblique. Ground colour glossy brownish; a longitudinal white striation and a rather distinct white stripe from wing base to three-fifths its length. Discal dot distinct, situated at the end of the white stripe. Medial dot just in wing centre and slightly defined. No trace of subterminal fascia present. A brown streak from two-fifths of dorsum obliquely apicad. Eight distinct, brown, terminal streaks. Fringes glossy, uniformly whitish. Hindwing glossy, somewhat transparent, white, with fringes concolorous. Under surface: Forewing glossy, pale yellowish-brown, termen edged with brown, fringes white with two dividing brown lines, hindwing glossy white, darkened with pale yellowish brown on costal area;

### Female genitalia

Labia normal, with caudal margins rather straight. Posterior apophyses rather wide at bases, gradually tapering to two-fifths their length, thence rather evenly wide up to the tips. Genital plate normal. Ostium pouch of a very peculiar shape; it is very heavily sclerotized, rather bilobed proximally, strongly tapering caudad; a distinct dorsal medial ridge; somewhat like a second pouch of a transparent weak membrane proximally. Ductus bursae lightly sclerotized throughout, narrow. Bursa copulatrix slightly elongate; no signum present.

## Comments

This species is described from a unique female specimen from Nyasaland. It is a rather atypical member of the genus as the double frenulum shows. The distinctly arched costa of the forewing and oblique termen are features rather seldom met with among the species of *Calamotropha* ZELL. The new species is very distinctive and does not resemble any of the other representatives of the genus. The discovery of the male would certainly clarify the situation regarding the generic placement of the species.

The species is named for my wife Danuta BŁESZYŃSKA.

### Material examined

Holotype: „Nyasaland, Mt. Mlanje. 24. IV. 1913. S. A. NEAVE, 1914—171“, GS-1268/BŁ., coll. Brit. Mus. (N. H.).

### *Calamotropha cleopatra* sp. n. ♂

[Pl. XLIII, Fig. 96, Pl. LVI, Fig. 157]

Male. Ocelli absent. Antenna distinctly serrate, uniformly glossy brownish. Labial palpi approximately twice the length of the diameter of the eye; white. Maxillary palpi concolorous. Face not protruding forward beyond the eye, broadly rounded; white. Vertex concolorous. Patagia pale brownish with central area whitened. Thorax and tegulae brownish. Forewing, slightly expanding posteriorly.  $R_1$  free. Costa nearly straight; apex rather acute; termen fairly straight, nearly vertical to costa. Ground colour glossy, brown-yellowish with costal area darkened with brown. Discal dot distinctly defined. The medial dot in the typoid is larger than the discal one, situated just in the wing centre; it is lacking in the holotype. Subterminal fascia traceable, broadly excurved, running rather near termen. Fringes uniform, shiny, rather concolorous with the ground colour. Terminal dots distinct from apex to anal angle. Hindwing glossy pale yellowish, fringes glossy, concolorous. Under surface: Forewing uniformly glossy brown; hindwing glossy whitish with costal area broadly brown.

### Male genitalia

Uncus arched, long and slender, tapering apically to a sharp point; a few hairs midway from apex to base; two basal small projections provided with typical long hairs. Tegumen normal, tapering ventrad. Valva undivided; costa rather heavily sclerotized, lacking hair which appears only on its terminal portion. The latter broadly rounded, provided with a distinct, heavily sclerotized, tapering, spine-shaped process; the ventral, basalwards following area clothed with several very minute, short spines, further on with not numerous hairs of medium length. Pseudosaccus rather narrow. Vinculum appro-

ximately equal to length of valva. Aedeagus distinctly shorter than the total armature, straight, narrow; two rather small cornuti in the apical portion are present.

### Comments

*C. cleopatra* sp. n. is described from two male specimens coming from British East Africa. It differs on both colour and genitalic characters from the other members of the genus and occupies a rather isolated systematic position among them. However, it is a perfectly typical representative of the genus under consideration.

### Material examined

Holotype: „Africa or. Kilwa“, GS-1612/BŁ., male, author's coll.; one male typoid: „Kilwa, Germ. E. Afr. 3. I. [19]00 (REIMER)“, GS-1577/BŁ., coll. Brit. Mus. (N. H.).

### *Calamotropha robustella* SNELLEN

[Pl. XXXVII, Fig. 70, Pl. LXVI, Fig. 202]

1872. *Calamotropha robustella* SNELLEN, Tijd. Ent. 15: 100, pl. VIII, f. 2, 3 (sp. n.).

1896. *Calamotropha robustella*, HAMPSON, Proc. Zool. Soc. Lond. 1895: 939.

Female. Ocelli absent. Antennae rather distinctly serrate, uniformly pale beige, glossy. Labial palpi three and one half the length of the diameter of the eye; brownish or brown with apical portion whitened. Maxillary palpi brown on basal half and yellowish to pale beige on distal half. Thorax, patagia and tegulae beige to brown.  $R_1$  in the forewing free. Frenulum triple. Length of forewing about 13 mm., maximal width about 4,5 mm. Costa very delicately arched from its very base up to apex; the latter acute; termen straight, vertical to costa. Ground colour nearly dull, pale beige to light brown. Subterminal fascia rather, ill defined, it is a very narrow, brown line; upper portion broadly excurved, lower portion running obliquely to dorsum; no dorsal projection present. A trace of median fascia from below discal dot strongly obliquely to dorsum with an indication of a small, barely visible indentation in wing centre. Terminal dots well defined, eight in number. Fringes glossy, somewhat paler than ground colour. Hindwing creamy-yellowish, distinctly glossy with fringes concolorous. Under surface. Forewing strongly glossy, yellowish-beige with discal dot and marginal dots poorly traceable and fringes concolorous; hindwing rather concolorous with upper surface.

### Female genitalia

Labia with caudal margins rather straight. Posterior apophyses distinctly dilated midway from apices. Genital plate long with anterior apophyses long, curved dorsad; it is linked to ostium pouch with a rather stout bridge. Ostium

pouch somewhat wider than ductus bursae, moderately sclerotized, produced and rounded caudally. Ductus bursae lightly sclerotized throughout; no ribbing present. Bursa copulatrix round, more than twice shorter than ductus bursae. No signum present.

### Comments

This species was described from a unique female specimen from Lower Guinea in Africa. An other female from Anambara, Creek, Africa is identified as belonging to the species under consideration. As far I know the male of *C. robustella* SNELL. has not as yet been found. The discovery of male would certainly better clarify the systematic position among *Calamotropha* ZELL. of the species in question. Possibly it occupies a rather isolated position in the genus.

### Material examined

Holotype — female. Lower Guinea, Africa, GS-3386, coll. Rijksmuseum v. Natuurlijke Historie, Leiden; one female spec. from Anambara, Creek, Africa, GS-1925/B.L., author's coll.

### *Calamotropha mimosa* sp. n. ♂

[Pl. XXXIX, Fig. 77, Pl. LIV, Fig. 146]

Male. Ocelli absent. Antennae distinctly serrate, glossy, greenish-brown. Labial and maxillary palpi unfortunately destroyed and lacking. Face nearly not protruding forward beyond the eye, broadly rounded, brownish. Vertex white. Patagia brown at sides and white in the middle. Thorax and tegulae brown.  $R_1$  in the forewing free. Length 9 mm., maximal width 3 mm. Costa very delicately arched, apex acute, termen very slightly oblique. Ground colour glossy, brown-grey with a very delicate greenish tint. A white, longitudinal stripe forked into three arms in the outer area of the wing; it is divided longitudinally by dark streaks in basal and medial part. Costal and outer area of the wing with several very narrow, longitudinal streaks reaching up to termen. The latter bordered with a dark line, not by dots or streaks. Discal dot well defined, situated on the white stripe. Dorsum broadly whitened. Fringes glossy, light brownish, whitened at their very bases. Subterminal fascia fairly distinct, brown; upper part broadly excurved and very minutely dentate, lower part with a very small, tooth-like projection above dorsum. Hindwing glossy white, darkened on the costal area; termen distinctly edged with dark; a rather distinct subterminal fascia is present; fringes pure white, rather darkened on costa. Under surface: Forewing glossy uniformly brownish-grey; hindwing glossy whitish, broadly darkened with grey on costal and outer area; termen distinctly darkened.

### Male genitalia

Uncus slender, long, very delicately arched, provided with several typical, long hairs at base; tip rather acute. Gnathos equal to length of uncus, slender, faintly expanding caudally, with apex rather rounded. Tegumen proportionately narrow. Valva undivided, costa arched, fold-like thickened; this thickening dilated and decidedly incised caudally, hairs are present only on caudal portion. Caudal margin of the valva notched. Ventral margin arched, projected caudally in a strong, very heavily sclerotized process tapering to a pointed tip. Ventral-caudal area clothed with hairs of medium length. Several hairs on a barely visible, basal-ventral fold. Saccus well developed. Vinculum approximately as large as valva. Aedeagus straight, slender, decidedly shorter than the total armature; six very thin, short cornuti situated apically.

### Comments

The new species is described from a unique male specimen from Dungu, Northern-Eastern Belgian Congo. It is a typical member of the genus. Because of the genitalic characters the species is very distinctive. In colour and pattern it resembles *C. athena* sp. n., but differs by the greyer forewing which is delicately tinged with a greenish hue.

### Material examined

Holotype — male: „Dungu, Upper Uelle distr. August“, GS-1384/BZ., coll. Brit. Mus. (N. H.).

### *Calamotropha athena* sp. n.

[Pl. XXXIX, Fig. 79, 80, Pl. LIV, Fig. 143, Pl. LXV, Fig. 200]

Ocelli absent. Antennae distinctly serrate in male and flatly serrate in female; glossy, uniformly brown. Labial palpi approximately three to four times the length of the diameter of the eye; pale brownish, whitened from above. Maxillary palpi brown on basal half and white on distal half. Face broadly rounded, not protruding forward beyond the eye; white. Vertex white-creamy. Patagia rather light brown at sides and creamy in the central area. Thorax and tegulae rather light brown, with some slightly defined, whitish, small irrorations.  $R_1$  in forewing free. Frenulum of the female triple. Length of forewing 10,5—11,4 mm., maximal width 3,8—5 mm. Forewing of nearly even width throughout except for the very base which is curved. Costa very delicately arched, apex distinctly acute, termen barely concave below apex, nearly vertical to costa, minutely sinuate. Ground colour rather glossy brown, whitened in places. A distinct, whitish, longitudinal stripe from wing base extending up to apex; it is edged with dark brown below at base. Discal dot well defined, situated at the lower border of the light stripe. Subterminal fascia delicately dentate, upper portion broadly excurved, broken by the longitudinal stripe

below costa; a tooth-like, rather small projection above dorsum. Terminal dots a row of distinct, dark, small triangles from apex to dorsum. Fringes glossy brownish, with a delicate dividing darker line; whitened at their very bases. Hindwing glossy pale greyish, lightened in costal and basal area. Fringes glossy, uniformly whitish, in female with a very delicate darker line running near their bases.

#### Male genitalia

Uncus long, very slender, provided with several typical long hairs at base. Gnathos somewhat broader than uncus, rounded terminally. Tegumen normal. Valva undivided, tapering posteriorly to a heavily sclerotized tip; costa lacks hair; terminal portion provided with numerous hairs of medium length; inner surface of the proximal-ventral area covered with several stout, straight spines. Pseudosaccus proportionately very large, approximately two-thirds the length of vinculum. The latter somewhat shorter than valva. Aedeagus distinctly bent, considerably tapering posteriorly to a rather acute tip. No cornuti present.

#### Female genitalia

Proportionately very large, about 6 mm. long. Bursa copulatrix reaching the border of the fourth and the fifth segment of abdomen. Caudal margins of labia rather straight, with distinct basal strengthenings; posterior apophyses broad basally, rather gradually tapering cephalad, theirs margins feebly dentate in basal half. Posterior border of the genital plate indistinct; anterior apophyses strongly broadened in their basal half. Ostium pouch heavily sclerotized, somewhat narrowed apically; ductus bursae lightly sclerotized, evenly wide throughout. Bursa copulatrix rather ovate; no signum present.

#### Comments

*Calamotropha athena* sp. n. is described from one male and two female specimens from Central-Eastern and Central-Western Africa. This species is a typical representative of the genus under consideration as the absence of ocelli, the face broadly rounded, the triple frenulum of the female, as well as the armature of the genitalia of both sexes shows. Because of colour and pattern the species is rather allied to the preceding one, however, distinguishable by the browner colour and very distinctive genitalia as is shown in the figures.

#### Material examined

Holotype — male: „Cross River, Old Calabar“, GS-1097/BL., coll. Brit. Mus. (N. H.); allotype — female: „S. Leone“, GS-1112/BL., coll. Brit. Mus. (N. H.); one female typoid: „Masindi. June [18]97. (Dr. ANSORGE)“, GS-1361/BL., author's coll.

***Calamotropha heliocausta* (WALLENGREN), comb. n.**

[Pl. XL, Fig. 83, Pl. LVI, Fig. 152, Pl. LXIX, Fig. 212]

1876. *Crambus heliocaustus* WALLENGREN, Aefv. Ak. Förh. 32 (1875): 126 (sp. n.).1896. *Crambus heliocaustus*, HAMPSON, Proc. Zool. Soc. Lond. 1895: 940.

Ocelli absent. Antennae uniformly light brown; serrate in both sexes, in female more minutely than in male. Labial palpi three times the length of the diameter of the eye; from above lightened on sides. Maxillary palpi brown on basal half and pale creamy on apical half. Face not protruding forward beyond the eye, broadly rounded, white to creamy. Vertex white to creamy, in some instances mixed with brown in the central area. Patagia brown at sides and pale creamy-yellowish to white centrally. Thorax pale brownish to whitish. Tegulae brown, lightened on sides.  $R_1$  in the forewing free. Frenulum of the female triple. Length of forewing 11—12,5 mm., maximal width 3,5—4,3 mm. Costa of male rather straight and of female distinctly arched; apex rather acute in either sex; termen nearly vertical to costa, tornus broadly rounded. Ground colour glossy, pale yellowish; costa edged with a more or less well defined, posteriorly tapering, brown stripe. Discal dot dark brown, well indicated. No medial dot present. Veins narrowly delineated with brown. No trace of any transverse marking present. Terminal dots well marked, eight from apex to dorsum. Fringes glossy, uniformly pale brownish. Hindwing glossy white to white-creamy. Fringes concolorous with the ground colour, very faintly darkened on costa. Under surface: Forewing glossy uniformly brown, discal dot indicated; hindwing glossy white, darkened with brown in the costal area.

**Male genitalia**

Uncus and gnathos of equal length, slender, long; the long typical hairs situated on two distinct projections at the base of uncus. Tegumen normal, clothed with hair ventrally. Valva undivided, heavily sclerotized nearly over the total surface. Costa obliquely cut in terminal two-fifths. Apical portion of valva tapered, clothed with not numerous hairs of medium length. Ventral portion not differentiated. Central-basal area clothed with stout hairs. Pseudosaccus proportionately small. Vinculum normal, decidedly shorter than valva. Aedeagus a trifle than the total armature, gently arched, evenly wide throughout. Two tapering caudad, moderate cornuti are present.

**Female genitalia**

Labia normal with caudal margins rather straight; posterior apophyses very slender, extremely gently expanding near the bases; basal strengthenings of labia narrow but distinct. Genital plate wide, anterior apophyses rather shorter than the posterior ones. Ostium pouch heavily sclerotized, rather

trapezoidal with rounded corners; it is markedly concave at each side; caudal edge with a minute projection situated centrally. Ductus bursae lightly sclerotized throughout, fairly narrow, with a delicate longitudinal wrinkling just behind the ostium pouch. Bursa copulatrix large, rather ovate, equal to length of the ductus bursae; no signum present.

#### Comments

The species was described from Transvaal, Africa. I am unable to state the location of the type. At any rate it is not in the Naturhistoriska Riksmuseet in Stockholm.

*C. helioecausta* (WALL.) and the subsequent *C. wallengreni* sp. n., *C. psaltrias* (MEYR.), *C. agryppina* sp. n., *C. joskeae* sp. n. and *C. bicornutella* sp. n. form a very distinctive group among the species of *Calamotropha* ZELL. *C. helioecausta* (WALL.), *C. wallengreni* sp. n. and *C. psaltrias* (MEYR.) are almost indistinguishable on the facies, but easy to separate by the genitalia. The female of *C. wallengreni* sp. n. and the male of *C. psaltrias* (MEYR.) are unknown. The association of the males and a female of *C. helioecausta* (WALL.) which I have at my disposal may be incorrect. However, having such scanty material it is quite impossible to clarify this question. The group in question appears to be rather numerous and very poorly known. One can judge that the only female of *C. psaltrias* (MEYR.) and the unique male of *C. wallengreni* sp. n. belong to one species, however, the former comes from Katanga and the latter from Lower Tugela (Zululand) and for the time being I prefer to take them separately. *C. agryppina* sp. n. is easy to distinguish by the presence of the median dot that lacking in *C. helioecausta* (WALL.), *C. wallengreni* sp. n. and *C. psaltrias* (MEYR.). *C. bicornutella* sp. n. is rather distinctive on the dark colour of the forewing.

#### Material examined

One male: „Natal: Van Reenen, Drakensberg. Dec. 1926“, GS-1660/B.L., coll. Brit. Mus. (N. H.); one male and one female from Transvaal, male 1680/B. [M., coll. Brit. Mus. (N. H.) (female genitalia are false from another species, not *Calamotropha* ZELL); one male from Pretoria, GS-1060/B.L., author's coll.; one female from Salisbury, Mashonaland, X. 1900, GS-1227/B.L., coll. Brit. Mus. (N. H.).

#### *Calamotropha psaltrias* (MEYRICK), comb. n. ♀

[Pl. XLI, Fig. 86, Pl. LXIX, Fig. 214]

1933. *Crambus psaltrias* MEYRICK, Exot. Micr. 4: 378 (sp. n.).

Female. Ocelli totally atrophied. Antennae damaged. Labial palpi brown, third segment damaged. Maxillary palpi brown on basal half and white on distal half. Face rather slightly protruding forward beyond the eye, broadly

rounded, white. Vertex concolorous. Patagia creamy beige at sides and white in the central area. Thorax and tegulae pale beige.  $R_1$  in the forewing free. Frenulum triple. Length of forewing 12 mm., maximal width 4,3 mm. Costa very faintly arched except at base which is distinctly curved; apex acute; termen slightly oblique, straight. Ground colour glossy whitish. Costa edged with a brown stripe tapering apicad. Veins and intervenular spaces delineated with beige-brown. Intervenular lines rather paler than the venular ones. Discal dot distinctly defined, dark brown. Medial dot absent. No transverse markings present. A row of dark terminal dots well defined. Fringes glossy white with and indistinct, brownish, dividing line. Hindwing distinctly glossy whitish; fringes concolorous. Under surface: Forewing distinctly glossy, brown with discal dot well defined and terminal dots absent; fringes rather concolorous with the adjacent area of the wing; hindwing glossy whitish with costal area shaded with brown; fringes glossy whitish.

#### Female genitalia

Labia wide with caudal margins slightly concave; posterior apophyses gradually expanding from midway from apices up to bases. Basal strengthenings of the labia distinct, broad. Genital plate broad with anterior apophyses curved ventrad, markedly expanding caudad. The plate is linked to the ostium pouch with two narrow, short bridges. Ostium pouch heavily sclerotized, apically truncate, opened dorsally; its caudal and dorsal margins extremely finely spined. Cephalic margin of the ostium pouch very distinctly bordered from the lightly sclerotized ductus bursae. A bulbous membrane around the caudal portion of the ductus bursae beyond ostium pouch. Ductus bursae narrow, lightly sclerotized throughout. Bursa copulatrix rather elongate; over all scobinate; no signum present.

#### Comments

This species was described from unique female specimen from Katanga (Elisabethville), Congo. It is very similar to *C. heliocausta* (WALK.) and *C. wallengreni* sp. n. on the colour and pattern. However, this species is rather paler than the remaining two species. The face of *C. psaltrias* (MEYR.) is somewhat more protruding forward beyond the eye than in *C. heliocausta* (WALL.). The female genitalia of the two are perfectly distinct from each other as is shown in the figures. The male of *C. psaltrias* (MEYR.) is so far undiscovered. As far as I know, no further females of this species have as yet been found.

#### Material examined

Holotype — female: „Musée du Congo, Katanga; Kanda-Kanda. 8. XII. 1925. Ch. SEYDEL“, „R. Dét. OO. 2245“, „M. 1508“, „Type“, „*Crambus psaltrias* MEYR. n. sp. Typ.“, GS-1653/B.L., coll. Koninklijk Museum van Congo, Tervuren.

*Calamotropha wallengreni* sp. n. ♂

[Pl. XLI, Fig. 85, Pl. LVI, Fig. 154]

Male. Ocelli absent.  $R_1$  in the forewing free. The facies rather indistinguishable from that of *C. heliocausta* (WALL.). Length of forewing 12,5 mm., maximal width 4,3 mm.

## Male genitalia

Uncus rather similar as in *C. heliocausta* (WALL.), being rather more pointed terminally. Gnathos seems to be broken terminally. Valva more pointed apically than in *C. heliocausta* (WALL.) and the heavily sclerotized apical and costal portion is much narrower than in that species. The spined inner area larger and extending decidedly more cephalad than in *C. heliocausta* (WALL.). Ventral-inner projection distinct. Pseudosaccus well developed. Vinculum larger than in *C. heliocausta* (WALL.). Aedeagus long and straight, delicately dilated basally; vesica armed with one rather long, dilated basally cornutus towards apex.

## Comments

The new species is described from a unique male specimen from Zululand. It is practically indistinguishable by the facies from preceding *C. heliocausta* (WALL.). However, the differences in the male genitalia of the two are rather considerable. The new species is named in honour of H. D. J. WALLENGREN.

## Material examined

Holotype — male: „Zululand, Lower Tugela, 160. ft. 21. 1902, E. D. REYNOLDS, 1902—329“, GS-1641/Br., coll. Brit. Mus. (N. H.).

*Calamotropha agryppina* sp. n. ♀

[Pl. XLI, Fig. 87, Pl. LXIX, Fig. 213]

Female. Ocelli vestigial, barely visible. Antennae flatly serrate, uniformly whitish from above. Labial palpi three times the length of the diameter of the eye; pale brownish and whitened from above. Maxillary palpi pale brownish on basal half and whitish on distal half. Face broadly rounded, not protruding forward beyond the eye; white. Vertex concolorous with face. Patagia pale brownish at side and whitened in the central area. Thorax and tegulae pale brownish.  $R_1$  in the forewing free. Frenulum triple. Length of forewing 9,5 mm., maximal width 3,2 mm. Costa rather straight, apex acute, termen gently oblique. Ground colour rather shiny, pale brownish. Discal dot very well defined, proportionately large. Medial dot present, well defined. Subterminal fascia markedly outangled above the wing middle, provided with a small tooth above dorsum. Terminal dots triangular, very distinct dark brown, touching with

each other. Fringes shiny pale brownish, white at their bases. Hindwing white with fringes concolorous. Under surface: Forewing glossy yellowish; discal dot well visible; hindwing whitish, glossy.

#### Female genitalia

Labia normal with caudal margins straight; posterior apophyses very slender, not dilated. Genital plate decidedly narrower than in the preceding species. Ostium pouch rather heavily sclerotized, short, broader than ductus bursae; broadly rounded, distinctly concave terminally, clothed with numerous, very minute spines. Ductus bursae lightly sclerotized throughout; a longitudinal feeble wrinkling behind ostium pouch, further cephalad narrowed and expanding to bursa copulatrix. The latter round; no signum present.

#### Comments

This species is described from a unique female specimen from Nyasaland, Africa. It was placed under „*Crambus heliocaustus* WALL.“ in the main collection at the British Museum (N. H.) in London. I place this species next to *Calamotropha heliocausta* (WALL.), *C. wallengreni* sp. n. and *C. psaltrias* (MEYR.). They are rather similar in the colour and pattern, but distinguishable by the presence of the medial dot in the species under consideration and absence of it in *C. heliocausta* (WALL.), *C. wallengreni* sp. n. and *C. psaltrias* (MEYR.). I do not consider the presence of vestigial ocelli in the former and the absence of them from the three latter species as an important feature to distinguish the new species. Such a character seems to be somewhat variable as is shown in the other species of the genus. The main differences between both *C. agryppina* sp. n. and *C. heliocausta* (WALL.) show the female genitalia of the two [the female of *C. psaltrias* (MEYR.) and of *C. wallengreni* sp. n. is unknown]. The genitalia of the former are much smaller; ostium pouch is very indistinctly bordered proximally and clothed with minute spines, being smooth, larger and decidedly bordered and concave on proximal side in the latter. The discovery of the male of the new species would certainly show further features distinguishing the two species.

#### Material examined

Holotype — female: „Nyasaland, Port Herald. 11. V. 1913. J. E. S. OLD. 1914—113“, GS-1228/BZ., coll. Brit. Mus. (N. H.).

#### *Calamotropha joskeella* sp. n.

[Pl. XL, Fig. 84, Pl. LVI, Fig. 155, Pl. LXIX, Fig. 215]

Ocelli absent. Antennae uniformly pale beige, of a basic *Calamotropha*-shape. Labial palpi two and one half times the length of the diameter of the eye; light brown. Maxillary palpi light brown, lightened dirty creamy on apical

portion. Face barely protruding forward beyond the eye, rounded; creamy, tinged brown in centre. Vertex creamy. Patagia brown at sides and pale beige centrally. Thorax and tegulae brown. Frenulum of the female triple.  $R_1$  in the forewing free. Length of forewing about 14 mm., maximal width about 5 mm. Costa rather straight, apex narrowly rounded, termen straight and vertical to costa. Ground colour brownish, nearly uniform. Costa indistinctly bordered with a darker stripe. Discal dot rather distinct. Medial dot also distinct, situated in three-sevenths from wing base. No transverse fascia present. Terminal dots distinct from apex up to anal angle. Veins narrowly delineated with darker. Fringes uniformly glossy brownish, paler than ground colour. Hindwing distinctly glossy, somewhat transparent, dirty whitish-greyish; fringes concolorous. Under surface distinctly glossy with no marking; hindwing darkened on costal portion.

#### Male genitalia

Uncus and gnathos rather similar to those in *C. bicornutella* sp. n.; gnathos with apex slightly swollen. Tegumen lacks hair. Valva undivided; costa rather straight, lacks hair; terminal portion decidedly bowed, hairy, minutely but distinctly dentate. Terminal part of ventral margin broadly, flatly notched. Central area with a large, distinctly bordered area clothed with numerous, stout bristles. Total valva rather heavily sclerotized. Costal portion with a fold running throughout its length. Pseudosaccus and vinculum rather similar to those in *C. bicornutella* sp. n. Aedeagus strikingly similar to that in *C. bicornutella* sp. n.; two cornuti in vesica are present.

#### Female genitalia

Labia with caudal margins slightly concave; basal strengthenings distinct; posterior apophyses triangularly dilated at their bases. Genital plate broad, anterior apophyses dilated in basal portions. Ostium pouch linked to genital plate with a short, rather heavily sclerotized bridge; caudal half heavily sclerotized, cephalic half lightly sclerotized, wrinkled; apex decidedly produced; opening broad, strongly obliquely truncate. Ductus bursae narrow, lightly sclerotized throughout; wrinkled beyond ostium pouch. Bursa copulatrix ovate; no signum present.

#### Comments

*C. joskeella* sp. n. is a typical member of *C. heliocausta* (WALL.)-group. It comes very near *C. bicornutella* sp. n., however, the two are perfectly distinct on facies and male genitalia (the female of *C. bicornutella* sp. n. is as yet unknown). The species is very distinctive by its great size and uniform coloration of the forewing. In male genitalia very characteristic is the dentation of the terminal part of the valva, lacking in the other species of the

*C. helioecausta* (WALL.)-group. The new species is described from one male and two female examples from Tanganyika-Territory. It is named in honour of Mrs. Joske KUCHLEIN of Amsterdam.

#### Material examined

Holotype — male: „Tanganyika-Terr., Matengo Hochland was. v. Songea. 11—20. XII. [19]35, ZERNY“, „Ugano 15—1700 m.“, GS-1791/BL., Allotype — female from the same locality, 11.—20. III. 1936, both in coll. Nathist. Mus., Vienna; one female typoid from Tanganyika-Terr., Ob.-Lueké-Tal, 14—1500 m., GS-1800/BL., author's coll.

#### *Calamotropha bicornutella* sp. n. ♂

[Pl. XLI, Fig. 88, Pl. LVI, Fig. 153]

Male. Ocelli absent. Antennae distinctly serrate, uniformly pale brown. Labial palpi approximately twice the length of the diameter of the eye; pale brown, whitened from above. Maxillary palpi pale brown on proximal half and whitish on distal half. Face nearly not protruding forward beyond the eye, broadly rounded, rather pale brown. Vertex concolorous. Patagia pale brown. Thorax and tegulae brown.  $R_1$  in the forewing free. Fore wing slightly expanding posteriorly. Length 8,5 mm., maximal width 3,8 mm. Costa arched at the wing base, further on straight; apex rather acute; termen fairly bowed and nearly vertical to costa. Ground colour glossy brown. Markings rather poorly indicated. Discal dot fairly distinct. Medial dot larger than the discal one. Subterminal fascia a trace of a brown line which is broadly excurved in upper portion and tooth-like projected above dorsum. Terminal dots eight, well marked. Fringes glossy, rather uniform, concolorous with the ground colour. Hindwing glossy pale brown, somewhat lightened in central and basal area. Fringes concolorous with ground colour. Under surface: Forewing shiny brown with discal dot traceable; hindwing shiny pale beige darkened on costal area.

#### Male genitalia

In general rather resembling those of *C. helioecausta* (WALL.). Uncus arched, rather rounded apically, shorter than in *C. helioecausta* (WALL.). Gnathos about as long as uncus, rounded apically. Hairs situated on two small projections at base of uncus. Such a character also appears in *C. helioecausta* (WALL.). Tegumen normal with ventral side clothed with a series of hairs. Valva undivided, heavily sclerotized; terminal portion narrowed and truncate, clothed with hairs of medium size. Costa sinuate, lacks hair. The inner surface of the valva shows a rather large area clothed with rather numerous, stout bristles. In *C. helioecausta* (WALL.) that area is smaller and situated nearer the base of the valva. Pseudosaccus larger than in *C. helioecausta* (WALL.). Vinculum shorter than valva, decidedly tapering cephalad. Aedeagus rather similar to

that in *C. heliocausta* (WALL.) differing in that is more bowed and something longer in relation to the total armature. Two moderate, tapering, pointed cornuti are present.

### Comments

*C. bicornutella* sp. n. is described from a unique male specimen from Ambaca, Angola. It belongs to the ROTHSCHILD Bequest at the British Museum (N. H.) in London. I place the new species next to the preceding one. The two differ on colour which is much darker in the species under consideration; termen of the forewing is less oblique and the discal dot on the under surface is only barely visible, being well defined in *C. agryppina* sp. n. Only the discovery of further examples might solve whether both *C. bicornutella* sp. n. and *C. agryppina* sp. n. are distinct species or the association them into one species should take place. *C. heliocausta* (WALL.), *C. wallengreni* sp. n., *C. psaltrias* (MEYR.), *C. agryppina* sp. n. and *C. bicornutella* sp. n. form a distinct, close group among the species of the genus *Calamotropha* ZELL.

### Material examined

Holotype — male: „Ambaca, Angola (Dr. ANSORGE)“, GS-1101/B.L., coll. Brit. Mus. (N. H.).

### *Calamotropha diodonta* (HAMPSON), comb. n.

[Pl. XXVI, Fig. 25, Pl. LV, Fig. 149, Pl. LXXI, Fig. 222]

1919. *Crambus diodonta* HAMPSON, Ann. Mag. Nat. Hist. (9) 3: 279 (sp. n.).

Ocelli absent. Antennae in both sexes rather distinctly serrate; uniformly brownish. Labial palpi more than twice the length of the diameter of the eye; pale brown on outer side beneath, otherwise white. Maxillary palpi brown on basal half and white on distal half. Face nearly not protruding forward beyond the eye, broadly rounded; white. Vertex concolorous with face. Patagia and thorax of cream colour. Tegulae pale beige.  $R_1$  in the forewing free. Frenulum of the female triple. Costa straight except for the basal portion, which is bowed; apex decidedly acute; termen straight, gently oblique. Forewing, slightly expading posteriorly. Ground colour nearly dull, pale creamy-beige, irrorated with brown scales. Outer area shaded with brown. Neither discal dot nor the medial dot present. Subterminal and medial fascia rather poorly indicated; narrow lines consisting of brown scales. Upper portion of the subterminal fascia broadly excurved, lower portion with a tooth-like projection below. Medial fascia rather parallel to the subterminal fascia, but more decidedly oblique above dorsum, formed by irregular patches of brown scales. Terminal dots distinct, eight in number. Fringes glossy, uniformly yellow-creamy. Hindwing slightly glossy, white, tinged with yellowish on costal area; fringes concolorous. Under surface: Forewing unicolorous glossy, pale beige with terminal dots poorly indicated; hindwing unicolorous, glossy, whitish.

### Male genitalia

Uncus short and stout, proportionately broad, tapering to a rather curved ventrad, sharply pointed tip; several rather long hairs on basal half, situated dorsally. Gnathos decidedly longer than uncus, dilated at tip. Tegumen relatively narrow. Valva broad, undivided, proportionately short. Costal portion heavily sclerotized, lacks hair, projected basally, beyond broadly rounded; adjacent area clothed with several hairs; apical portion broadly rounded, clothed with hair; ventral area not differentiated, poorly hairy on inner surface; two hairy folds in central area. Pseudosaccus unusually small, short. Vinculum very narrow. Aedeagus proportionately large, longer than the total armature, gently expanding caudally; terminated by a large, dorsal, curved dorsad, tapering prong and a similarly well sclerotized, posteriorly expanding, ventrally dentate process. No cornuti present.

### Female genitalia

Labia with caudal margins markedly concave; posterior apophyses moderately long, triangularly dilated in the basal portion; basal strengthenings of labia wide, distinct. Genital plate proportionately very narrow with anterior apophyses short, much triangularly dilated in two-thirds from bases. The connection of genital plate to ostium pouch is weak, membranous. The latter in form of a broad bowl, it is well sclerotized, with a stripe of short, longitudinal folds vertical to ostium bursae. Ductus bursae narrow, rather short. Bursa copulatrix markedly elongate, three times the length of ductus bursae; no signum present.

### Comments

The species was described from a few female examples from Old Calabar, Southern Nigeria. It is a rather atypical member of the genus as the presence of the medial fascia in the forewing, abnormally small pseudosaccus in the male genitalia as well as the narrow genital plate and short anterior apophyses in the female genitalia show. Similar characters of pattern and of the armature of female genitalia show the three subsequent species, namely, *C. kuchleini* sp. n. *C. subdiodonta* sp. n. and *C. schönnmanni* sp. n. Because of those features, the three mentioned species are unlike most species of the genus and form a distinct group among themselves. *C. subdiodonta* sp. n. is described only from female example and the discovery of the male of this species would certainly clarify its relationship to other members of the group in question.

### Material examined

Holotype — female: „Old Calabar, S. D. CROMPTON. 1901—165“, GS-5554/B. M./Bl., one female typoid labelled as the holotype, GS-1224/Bl., both coll. Brit. Mus. (N. H.); one male from Kamerun, GS-1584/Bl., coll. Naturhistoriska Riksmuseet, Stockholm; two males from Nigeria, GS-1103/Bl., from the ROTHSCHILD Bequest, coll. Brit. Mus. (N. H.) and author's coll; one female from Warri, Nigeria. IX. 1897, coll. Brit. Mus. (N. H.).

***Calamotropha kuchleini* sp. n.**

[Pl. XXVI, Fig. 26, Pl. LV, Fig. 150, Pl. LXXI, Fig. 223]

Ocelli absent. Antennae uniformly brown, of a basic *Calamotropha*-shape. Labial palpi three and one half times the length of the diameter of the eye; brown. Maxillary palpi brown, whitened on apical portion. Face barely protruding forward beyond the eye, broadly rounded; white, tinged brown in centre; vertex whitish. Patagia beige, lightened creamy in centre. Tegulae and thorax beige-creamy; thorax brown posteriorly. Frenulum of the female triple.  $R_1$  in forewing free. Length of forewing 9—11 mm., maximal width 3,3—4,2 mm. Costa nearly straight, apex acute, termen straight and hardly bowed. Ground colour barely glossy, whitish-creamy, shaded by brown in central and dorsal area. Subterminal fascia with dorsal projection markedly smaller than in *C. subdiodonta* sp. n. and rather similar to that in *C. diodonta* (HMPS.). Medial fascia distinct, is some instances more oblique than subterminal fascia. Terminal dots distinct from apex up to anal angle. Fringes glossy brown. Hindwing creamy-whitish, glossy, with fringes concolorous. Under surface glossy without markings.

**Male genitalia**

Uncus very stout and stout with apex broad, rounded (dorsal view). Gnathos in general similar to that in *C. diodonta* (HMPS.); apical swelling large. Tegumen normal. Valva undivided with apical portion produced to a narrow projection; the tip of the latter concave, with a dorsal tooth. Costa lacks hair. Ventral margin bowed, provided with rather long, stout hairs. Central area bulbous, clothed with numerous, stout bristles. Pseudosaccus well developed. Vinculum narrow, slightly concave from dorsal side. Aedeagus rather similar to that in *C. diodonta* (HMPS.) with ventral side clothed with short, tiny hairs in apical portion.

**Female genitalia**

Rather indistinguishable from those in *C. diodonta* (HMPS.). This is very interesting as the male genitalia of both *C. diodonta* (HMPS.) and *C. kuchleini* sp. n. are perfectly distinct from each other as the examination of several specimens of the two has shown.

**Comments**

This new species is described from six males and one female specimen from Tanganyika-Territory. It comes very near both *C. diodonta* (HMPS.) and subsequently described *C. subdiodonta* sp. n. The new species is separable from the former by much greater size; the male genitalia of the two are perfectly

distinct as is shown in the figures; in *C. subdiodonta* sp. n. the dorsal projection of the subterminal fascia is markedly deeper than in the species under consideration. Unfortunately *C. subdiodonta* sp. n. is described only from one female specimen. The new species is named in honour of Mr. Jopp KUCHLEIN of Amsterdam.

#### Material examined

Holotype — male: „Tanganyika-Terr., Matengo Hochland, wsw. v. Somgea. 11—20. XII. [19]35. ZERNY“, „Ugano 15—1700 m.“, coll. Nathist. Mus., Vienna; five male typoids from Tanganyika-Territory: Ugano and Songiro (the latter 1500 m. alt.), GS-1777/B.L., 1778/B.L., GS-1788/B.L., coll. Nat.-hist. Mus. Vienna and author's coll.; allotype — female, labelled as holotype, GS-1795/B.L., coll. Nat.-hist., Mus., Vienna.

#### *Calamotropha subdiodonta* sp. n. ♀

[Pl. XXVI, Fig. 27, Pl. LXX, Fig. 221]

Female. Ocelli absent. Antennae flatly serrate, uniformly pale brownish. Labial palpi more than twice the length of the diameter of the eye; apical joint whitish from above, otherwise palpi brownish. Maxillary palpi pale brownish on basal half and white on distal half. Face broadly rounded, not protruding forward beyond the eye; creamy; vertex concolorous. Patagia creamy. Thorax and tegulae pale brownish. Forewing with  $R_1$  free; frenulum triple. Forewing, slightly expanding terminad. Length 9,5 mm., maximal width 3,8 mm. Costa from the very base nearly straight; apex markedly acute; termen almost vertical to costa, straight. Ground colour almost dull, pale beige creamy. Markings ochreous. A few longitudinal streaks in costal area. Subterminal fascia brown, at costa as an oblique streak, much excurred towards the termen, running rather near to it, obliterate there; below middle of the wing width well indicated, strongly oblique to the wing base, projected in a long tooth slightly indicated by brown scales. A distinct, oblique medial streak, parallel to the subterminal fascia and a poorly indication of a much oblique streak from mid of costa form an incomplete medial fascia. Neither discal dot nor the medial one present. Terminal dots rather well defined, amalgamated with each other below apex. Fringes glossy beige, whitened at their very bases. Hindwing slightly glossy, whitish with fringes concolorous. Termen very narrowly bordered with darker below apex. Under surface: Forewing uniformly glossy pale beige, terminal dots rather distinct: hindwing glossy creamy, termen narrowly bordered with brownish, the bordering better visible in the underside than in the upperside.

#### Female genitalia

Labia with caudal margins rather slightly concave; basal strengthenings narrow, distinct; posterior apophyses very narrow from apices to middle,

thence very broadly dilated, lightly sclerotized. Genital plate proportionately narrow, anterior apophyses very short, situated near ostium pouch. The latter well coalescent with genital plate, rather well sclerotized, with margins sinuate and minutely dentate. Ductus bursae narrow, lightly sclerotized throughout, with slight indications of twisted wrinkles. Bursa copulatrix rather elongate equal to length of ductus bursae. No signum present.

#### Comments

This species is described from a unique female specimen from Abanga, Gabon. It appears to be closely related to the preceding species. The two are similar in colour and pattern being, however, perfectly distinct on their genitalia. The main differences distinguishing both *C. subdiodonta* sp. n. and *C. diodonta* (HMPS.) is the situation of posterior apophyses and the shape of the ostium pouch. In *C. subdiodonta* sp. n. posterior apophyses are markedly approximate to the ostium pouch, but situated a trifle above the middle of the genital plate in the second species; the margins of ostium pouch are much sinuate and minutely dentate in the former, being straight and smooth in the latter. There are other differences between the two species, however, too little material is available to consider these as of much specific significance.

#### Material examined

Holotype — female: „Abanga E., Gabon, Oct. [19]07 (Dr. ANSORGE)“, GS-1383/BL., coll. Brit. Mus. (N. H.).

#### *Calamotropha schönnmanni* sp. n.

[Pl. XXVI, Fig. 28, Pl. LV, Fig. 148, Pl. LXXI, Fig. 224]

Ocelli absent. Antennae of male serrate, uniformly pale beige. Labial palpi more than twice the length of the diameter of the eye; light brown, white from above. Maxillary palpi brown on basal half and white on distal half. Face rather distinctly produced forward, protruding beyond the eye; broadly rounded, white. Vertex white with several light brown scales centrally. Patagia pale beige on sides and whitish in central area. Thorax creamy. Tegulae pale beige.  $R_1$  in the forewing free. Frenulum triple. Length of forewing 11—12,5 mm., maximal width 3,8—4,5 mm.; costa extremely delicately arched, apex rather acute, termen very slightly oblique, delicately concave below apex. Ground colour almost dull, light beige. Veins and intervenular spaces delineated with white. A dark brown, oblique streak above dorsum presents an indication of the subterminal fascia. Another very oblique, concolorous streak before the wing centre. Terminal dots small, six in number. Fringes glossy, brown, decidedly darker than ground colour. Hindwing glossy, whitish-creamy with

fringes concolorous. Under surface: Forewing glossy, unicolorous, pale beige with fringes darker brown; hindwing rather concolorous with upper surface with costa narrowly tinged with a yellowish hue.

#### Male genitalia

Uncus of an abnormal shape for *Calamotropha* ZELL. It is much shorter than gnathos, deeply bifurcate; the tips rounded. Gnathos with apex broadly rounded. Tegumen with margins broadly folded. Valva undivided, strongly tapering to a heavily sclerotized, curved laterad spine. Costa hairy from one-third from its base. Pseudosaccus well developed. Aedeagus bent. Vesica armed with seven tapering, large cornuti.

#### Female genitalia

Labia normal with caudal margins rather concave; posterior apophyses broadly, triangularly dilated in their basal part. Genital plate rather short with anterior apophyses fairly short. Ostium pouch very heavily sclerotized, in form of a bowl with walls strongly folded. Ductus bursae very narrow, long, lightly sclerotized throughout. Bursa copulatrix without signum.

#### Comments

This new species is described from seven male and female examples from Tanganyika-Territory. I place it next to *C. diodonta* (HMPS.) - group because of some resemblances in facies. However, judging by the genitalia, *C. schönnmanni* sp. n. occupies a rather isolated systematic position in the genus in question. The new species is very easily distinguishable from the species of the *C. diodonta* (HMPS.)-group by its dark fringes of the forewing; also the brown indication of the subterminal fascia is nearly parallel to termen in the new species, being strongly oblique in the remaining three species; the distance between that streak and the submedial one is approximately three times as long as in the preceding species. The male and female genitalia of the new species are perfectly distinct from those of the species of the *C. diodonta* (HMPS.)-group as is shown in the figures. — The hair of costa in the male genitalia is rather atypical feature in the genus *Calamotropha* ZELL.; also the bifurcation of the uncus is an abnormal character.

This species is named in honour of Dr. R. SCHÖNNMANN of the Naturhistorisches Museum in Vienna.

#### Material examined

Holotype — male: „Tanganyika-Terr. Matengo-Hochland, wsw. v. Songea. 11—20. XII. [19]35. ZERNY“, „Ugano. 15—1700 m.“, coll. Nat.-hist. Mus., Vienna; allotype: „Tanganyika-Terr. Matengo-Hochland, wsw. v. Songea. 11—20. XII. [19]35. ZERNY“, „Ugano. 15—1700 m.“, GS-1795/B.L., coll. Nat.-hist. Mus Vienna; five male and female typoids from Tanganyika-Territory, Ugano, GS-1776/B.L., GS-1787/B.L., coll. Nat.-hist., Mus., Vienna and author's coll.

*Calamotropha tripartita* (HAMPSON), comb. n.

[Pl. XLII, Fig. 91, Pl. LII, Fig. 133]

1919. *Crambus tripartitus*, HAMPSON, Ann. Mag. Nat. Hist. (9) 3: 285 (sp. n.).

Ocelli absent. Antennae distinctly serrate, very dark brown. Labial palpi damaged, lacking. Face broadly rounded, not protruding forward beyond the eye; scaling nearly totally rubbed, the only preserved scales are white. Patagia very dark brown on sides and white in the central area. Thorax and tegulae very dark brown.  $R_1$  in the forewing free. Length 11,5 mm., maximal width 3,6 mm. Costa rather straight, apex acute, termen nearly vertical to costa, rather straight. Ground colour slightly glossy, dark brown, with nearly black, contrasted white pattern. A longitudinal, white stripe from wing base up to termen. Dorsal area broadly whitened. Subterminal fascia and distal dot both absent. Terminal dots present. Fringes distinctly glossy white with a medial, dividing, dark brown line. Hindwing glossy white; costa and costal fringes darkened up to apex. Under surface: Forewing brown, basal stripe paler; hindwing with costal area markedly darkened with grey-brown. Abdomen orange with a row of brown spots from above.

## Male genitalia

Uncus very long and extremely slender, distinctly arched ventrad, with apex sharply pointed; several typical long, basal hairs are present. Gnathos equal to length of uncus, broader than it, broadly triangularly projected ventrally in two-fifths from base; apex gently dilated, rounded. Tegumen rather narrow. Valva undivided, proportionately broad. Costa straight, thickened at base; apex broadly truncate; ventral edge bent at the very base, further straight, parallel to costa, from fours-sevenths oblique to apex. A broad, rather triangular fold in the apical portion. Hairs moderate and long, scattered over the costal and ventral area. Central area clothed with numerous, short, stout bristles. Pseudosaccus proportionately larger. Vinculum very broad, rather slightly elongate. Aedeagus straight, rather narrow, faintly dilated in basal portion; a single, decidedly curved, tapering cornutus is present.

## Comments

This species was described from a unique male specimen from Natal. Because of a considerable distinctness of the colour and pattern *C. tripartita* (HMPS.) occupies an isolated position among the species of *Calamotropha* ZELL. However, the species is a perfectly typical member of the genus, as the absence of the ocelli and the armature of the genitalia evidently shows. *C. tripartita* (HMPS.) is very easily distinguishable by its very contrasted white pattern of the forewing and orange-brown patterned abdomen.

## Material examined

Holotype — male: „Maritzburg. 11. I. Natal“, GS-5542/B. M./Br., coll. Brit. Mus. (N. H.).

*Calamotropha argyrostola* (HAMPSON), comb. n.

[Pl. XLII, Fig. 92, Pl. LII, Fig. 135, Pl. LXXI, Fig. 225]

1919. *Crambus argyrostola* HAMPSON, Ann. Mag. Nat. Hist. (9) 3: 441 (sp. n.).

Ocelli moderately developed, concolorous with the adjacent area. Antennae serrate in both sexes, but less distinctly in female than in male; whitish. Labial palpi approximately three times the length of the diameter of the eye; at outer side brown beneath, otherwise white. Maxillary palpi brown on basal half and white on distal half. Frenulum of the female triple.  $R_1$  in the forewing free. Length of forewing 16 mm, maximal width 5,5 mm. Face rather slightly protruding forward beyond the eye, white. Vertex, patagia, thorax and tegulae white. Costa straight, apex acute, termen rather distinctly oblique. Ground colour markedly glossy, white, partially tinged with a yellowish hue. Neither discal dot nor transverse markings present. Terminal dots three, rather poorly defined. Fringes concolorous with the ground colour. Hindwing glossy white with fringes concolorous. Under surface: Forewing considerably darkened with brown-grey in the medial and the basal area; hindwing concolorous with the upperside.

## Male genitalia

Uncus arched, rounded terminally, clothed with hairs of medium size; the typical long, basal hairs lacking. Gnathos broad basally, narrowed in two-thirds its length, broadened and truncate apically, provided with a series of very minute teeth on the dorsal side. Tegumen markedly tapering ventrad. Valva proportionately large with costal portion clothed with short hairs, rather heavily sclerotized, produced in an acuminate tip; a distinct, heavily sclerotized, bulbous projection from lightly sclerotized, hairy terminal area and another, rather long, lightly sclerotized, hairy, rounded process, terminating the ventral portion of valva. Saccus proportionately small. Vinculum much elongate, narrow. Aedeagus very short, rather narrow, unarmed; cornuti lacking.

## Female genitalia

Labia broad with caudal margins fairly concave, posterior apophyses decidedly broadened basally. Genital plate and anterior apophyses typical of the genus. Ostium pouch heavily sclerotized, markedly broader than ductus bursae, not differentiated. Ductus bursae rather lightly sclerotized, faintly longitudinally wrinkled before bursa copulatrix. The latter elongate, a trifle longer than ductus bursae; no signum present.

## Comments

The species was described from a unique female specimen from Natal. As far I know only one other specimen of *C. argyrostola* (HMPs.) (a male from

Natal) has as yet been found. Because of the presence of ocelli and atypical hair of uncus, the species under consideration represents a rather atypical member of *Calamotropha* ZELL. Perhaps it requires to be placed in a separate genus.

Material examined

Holotype — female: „10. II. [18]97, Karkloof, Natal, G. A. K. MARSCHALL 97—50“, GS-5564/B. M./Bl.; one male from Natal, GS-1234/B. M./Bl., both coll. Brit. Mus (N. H.).

***Calamotropha argenteociliella* PAGENSTECHER**

1893. *Calamotropha argenteociliella* PAGENSTECHER, Jahrb. Hamb. Wiss. Anst. 10: 256 (sp. n.).

Unfortunately I have had no opportunity to state the location of the type-specimens of this species. It was described from two examples from Quilimane, Africa (9. II. 1889). I have also not found any specimen in any collection determined as *Calamotropha argenteociliella* PAG.

***Calamotropha oculalis* (SNELLEN), comb. n.**

[Pl. XLIII, Fig. 95, Pl. LXI, Fig. 182]

1893. *Crambus oculalis* SNELLEN, Tijd. Ent. 36: 64 (sp. n.).

1895. *Crambus oculalis*, HAMPSON, Proc. Zool. Soc. Lond. 1895: 937 (in part).

Female. Ocelli poorly developed, small, light brown. Labial palpi three and one half times the length of the diameter of the eye; light yellowish and white at the tips and from above; in some instances a brown ring on mid segment present; apical joint broad at the apex. Maxillary palpi yellowish on basal half and white on distal half. Face distinctly produced forward, protruding beyond the eye; broadly rounded, white. Vertex concolorous with face. Patagia pale yellowish to light brown. Thorax creamy to pale yellowish-brownish.  $R_1$  in the forewing runs freely. Length about 11 mm., maximal width about 5 mm. Costa nearly straight, apex acuminate, termen finely concave below apex. Ground colour dull, pale straw-yellowish with costal portion broadly darkened with dark brown. Discal dot in two-thirds from wing base; in some instances reduced. Medial dot in three-fifths from wing base below middle of wing, small. Subterminal fascia rather well defined, a row of dark spots; it is broadly excurved below costa and rather straight on dorsum. A light triangle containing a dark spot in the apical area. Fringes markedly glossy, uniformly brown. Hindwing whitish to pale brownish, almost dull; fringes glossy creamy-whitish to pale brownish, with termen shaded with brown below apex. Under surface distinctly glossy with no markings.

Female genitalia

Labia with caudal margins distinctly concave, basal strengthenings proportionately narrow and short. Posterior apophyses slender, very slightly dilated basally. Genital plate moderate with anterior apophyses short. Ostium

pouch a broad, heavily sclerotized cup; it is deeply notched caudally-dorsally and incised dorsally beyond the middle. Ductus bursae finely wrinkled beyond the ostium pouch, rather narrow. Bursa copulatrix fairly elongate, no signum present.

### Comments

This species was described from a unique female [not male as stated by MUNROE c. s. (1958: 80)] from Java, Tegal Simpar, 3000 ft. (LUCASSEN). The holotype belongs to the collection of the Rijksmuseum van Natuurlijke Historie in Leiden. Through the kindness of Dr. A. DIAKONOFF of Leiden I have received the photographs of the moth and the genitalia. I have identified one female from Java and another female from the Philippines as belonging to the species under consideration. They have the genitalia strikingly similar to those of the holotype. So far as I know, the male of *C. oculalis* (SNELL.) is unknown. The specimens from India and Ceylon considered as *C. oculalis* (SNELL.) belong to a distinct species (description see below). The two are strikingly similar to each other in their facies, however, they are distinct on the armature of the female genitalia.

This species and the subsequent *C. indica* sp. n. and *C. melli* (CAR. & MEYR.) are rather atypical members of the genus in question, as the presence of small ocelli and normal hair of the uncus shows. Perhaps they need to be placed in a separate genus.

### Material examined

One female from Java, Nongkodjadjar, 4000 ft. V. 1934. GS-1226/B.L., coll. Brit. Mus. (N. H.); one female from the Philippines Is. Irisan, Benquet Prov., Luzon, GS-1642/B.L., coll. Brit. Mus. (N. H.).

### *Calamotropha indica* sp. n.

[Pl. XLIII, Fig. 93, Pl. XLVI, Fig. 110, Pl. LXI, Fig. 181]

1896. *Crambus oculalis*, HAMPSON, Proc. Zool. Soc. Lond. 1895: 957 (in part).

1896. *Crambus oculalis*, HAMPSON, Fauna Brit. India p. 15.

The new species is rather indistinguishable on facies from *C. oculalis* (SNELL.). Length of forewing 8—11 mm., maximal width 3,5—5,5 mm. Ocelli present. Frenulum of the female triple.  $R_1$  in the forewing free. The shape, colour and the pattern of the wings is as in *C. oculalis* (SNELL.).

### Male genitalia

Uncus narrow, faintly arched ventrad with apex narrowly rounded; hairs of moderate length scattered over central portion. Gnathos decidedly longer than uncus, with apical portion slightly curved ventrad; apex rounded. Tegumen narrow. Valva undivided, distinctly elongate; costa markedly bowed, narrowly thickened beyond middle. Apex broadly rounded, finely dentate. A slight fold near the anal-ventral angle. The latter and the terminal half

of the ventral margin is distinctly dentate. *Pseudosaccus* well developed. *Vineulum* elongate, somewhat tapering cephalad; apex rounded. *Aedeagus* much shorter than the total armature, nearly evenly wide throughout, straight. *Vesica* armed with four moderate cornuti towards the apex; the extreme cornutus much longer than the remaining cornuti; in some instances only two or three cornuti are present.

#### Female genitalia

In general rather similar to those of the preceding species, however, distinct in that the posterior apophyses are markedly dilated basally, genital plate broader, anterior apophyses somewhat longer and the genital pouch is much narrower and longer.

#### Comments

The new species is described from 14 male and female specimens from India and Ceylon. It has hitherto been considered as *C. oculalis* (SNELL.), however, the two species are perfectly distinct on the female genitalia. Unfortunately I have at my disposal no males from Java (typical locality for the preceding species). The HAMPSON record in 1896a: 937 is partly referable to this species as this author gives Java and Ceylon as the localities of *C. oculalis* (SNELL.).

Among the material of the new species I have found a male that shows the genitalia quite distinct from those of the typical *C. indica* sp. n. The valva of this specimen is much shorter and more broadly rounded and cornuti lacking. This specimen undoubtedly belong to *C. melli* (CAR. & MEYR.).

#### Material examined

Holotype — male: „Sikkim. 2800 ft. v. 1895. J. G. PILCHER“, GS.1645/B.L., coll. Brit. Mus. (N. H.); allotype: „Ceylon 96—211“, „Puttalam Ceylon. Sep[tember] [18]97“, GS.1518/B.L., coll. Brit. Mus. (N. H.); two male typoids: „Haldamulla. 12. III.“, coll. Brit. Mus. (N. H.); one male typoid: „Ralnapura. VIII. [19]15.“, coll. Brit. Mus. (N. H.); one male typoid: „Haputale. 5. II.“ (without abdomen), coll. Brit. Mus. (N. H.); one female typoid: „Haldamulla 8. III.“, coll. Brit. Mus. (N. H.); one female typoid: „Bhutan. G. C. DUDGEON. 92—203“, coll. Brit. Mus. (N. H.); one male typoid „Galagama“, coll. Brit. Mus. (N. H.); one female typoid: „Maskeliya, Ceylon IX.“, coll. Brit. Mus. (N. H.); one male typoid: „1889. Ceylon, Sz.“, coll. IZPAS., Warszawa, (without abdomen); one male typoid: „Ceylon, Green Coll. 91—26“, GS.1517/B.L., author's coll.; one female typoid: „W. Haputale, 4. II.“, GS.1646/B.L., author's coll.

#### *Calamotropha melli* (CARADJA & MEYRICK), comb. n.

[Pl. XLIII, Fig. 94, Pl. XLVI, Fig. 109]

1933. *Crambus melli* CARADJA & MEYRICK, Dtsch. ent. Zeit. „Iris“ 47: 140 (sp. n.).

Facies strikingly similar to that in the two preceding species. However, this species is perfectly distinct on its male genitalia. The female is as yet unknown.

### Male genitalia

Uncus and gnathos similar to those in *C. indica* sp. n. Valva much shorter and broadly rounded, being more elongate in the preceding species. No cornuti in vesica present.

### Comments

This species was described from four specimens from Kwantung, China. The collection of CARADJA in Bucarest includes two male typoids, so CARADJA and MEYRICK wrongly cited: „4♀“. The remaining two examples (holotype and a typoid) were in the collection in Dresden.

I have found a male of this species in the main collection at the British Museum (N. H.) in London. This is a specimen from the MACKWOOD collection, however, without a locality-label. Most probably, this specimen comes from Ceylon or India.

### Material examined

One male typoid: „Gf. 30. V. [19]18“, *Crambus melli* CAR. Type ♀“; one male typoid: „Lg. 28. V. [19]17“, GS-1675/BŁ., both in coll. Muz. Gr. Ant., Bucarest., one male: „MACKWOOD Coll. B. M. 1927—341“, GS-1649/BŁ., [?Ceylon], coll. Brit. Mus. (N. H.).

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## STRESZCZENIE

Niniejsze opracowanie jest pierwszą częścią rewizji światowych gatunków rodziny *Crambidae*. Zawiera rodzaj *Calamotropha* ZELL. Rodzaj ten rozsiedlony jest głównie w krainie orientalnej (37 gatunków) i etiopskiej (32 gatunki). W Palearktyce występuje 15 gatunków, a w krainie australijskiej jedynie pięć gatunków. Tak w Ameryce Północnej, jak i Południowej brak przedstawicieli rodzaju *Calamotropha* ZELL. Autor przebadał, z wyjątkiem trzech, wszystkie typy deskrypcyjne omawianych gatunków. Jako nowe zostały opisane: *C. josettae* sp. n. z Chin, *C. okanoi* sp. n. z Chin, Mandżurii i Japonii, *C. formosella* sp. n. i *C. sattleri* sp. n. z Formozy, *C. sienkiewiczi* sp. n. z Chin, *C. saturnella* sp. n., *C. alcesta* sp. n., *C. venera* sp. n. z Indii, *C. subalcesta* sp. n. z Formozy, *C. sumatraella* sp. n. z Sumatry, *C. pseudodielota* sp. n. i *C. schwarzi* sp. n. z Cejlonu, *C. indica* sp. n. z Indii i Cejlonu, *C. javaica* sp. n. z Jawy, *C. megalopunctata* sp. n. z Sudanu, *C. janusella* sp. n. z Abisynii, *C. diakonoffi* sp. n. z Natalu, *C. lattini* sp. n. i *C. danutae* sp. n. z Niasy, *C. martini* sp. n. z Ugandy, *C. stachi* sp. n. z Afryki Południowej, *C. xanthypa* sp. n. z Natalu, *C. cleopatra* sp. n. z Brytyjskiej Afryki Wschodniej, *C. mimosae* sp. n. z Konga, *C. athenae* sp. n. ze środkowo-wschodniej i środkowo-zachodniej Afryki, *C. wallengreni* sp. n. z Afryki Południowej, *C. bicornutella* sp. n. z Angoli, *C. kuchleini* sp. n. i *C. schönnmanni* sp. n. z Tanganiki, *C. subdiodonta* sp. n. z Gabonu, *C. agryppina* sp. n. z Niasy i *C. joskei* sp. n. z Tanganiki. Nadto zostały opisane dwa nowe podgatunki *C. atkinsoni malaica* ssp. n. z Malajów i *C. megalopunctata minutae* sp. n. ze Sierra Leone. Autor wydziela rodzaj rodzaj *Calamotropha* ZELL. z grupy rodzinowej *Crambus* F. na podstawie studiów porównawczych nad morfologią motyli oraz gąsienic, jak również na podstawie różnic biologicznych.

## РЕЗЮМЕ

Настоящая работа является первой частью ревизии всемирных видов семейства *Crambidae*.

Содержит род *Calamotropha* ZELL. Род этот расселен, главным образом, в ориентальной области (37 видов) и ефиопской (32 вида). В Палеарктике выступает 15 видов, а в австралийской области только пять видов. Как в Северной Америке, так и в Южной Америке, представители рода *Calamotropha* ZELL. отсутствуют. Автор исследовал все типы обследованных и обсуждаемых видов, за исключением трёх. Как новые описаны: *C. josettae* sp. n. из Китая, *C. okanoi* sp. n. из Китая, Манжурии и Японии, *C. formosella* sp. n. и *C. sattleri* sp. n. из Формозы, *C. sienkiewiczi* sp. n. из Китая, *C. saturnella* sp. n., *C. alcesta* sp. n., *C. venera* sp. n. из Индии, *C. subalcesta* sp. n. из Формозы, *C. sumatraella* sp. n. из Суматры, *C. pseudo-*

*dielota* sp. n. и *C. schwarzi* sp. n. из Цейлона, *C. indica* sp. n. с Индии и Цейлона, *C. javaica* sp. n. из Яавы, *C. megalopunctata* sp. из Судана, *C. janusella* sp. n. из Абиссинии, *C. diakonoffi* sp. n. из Натала, *C. lattini* sp. n. и *C. danutae* sp. n. из Ниассы *C. martini* sp. n. из Уганды, *C. stachi* sp. n. из Южной Африки, *C. xanthypa* sp. n. из Натала *C. cleopatra* sp. n. из Британской Восточной Африки, *C. mimosa* sp. n. из Конга, *C. athena* sp. n. из средне восточной и средне западной Африки, *C. wallengreni* sp. n. из южной Африки, *C. bicornutella* sp. n. из Анголы, *C. kuchleini* sp. n. и *C. schönnmanni* sp. n. с Танганьики, *C. subdiodonta* sp. n. из Габона, *C. agryppina* sp. n. из Ниассы и *C. joskeaella* sp. n. с Танганьики. Кроме того описан два новые подвида, *C. atkinsoni malaica* ssp. n. из Малаи и *C. megalopunctata minuta* ssp. n. из Серра Леоне. Автор выделяет род *Calamotropha* ZELL. из родовой группы *Crambus* F. на основании сравнительных изучений морфологии мотыльков (*im-ages*) и гусениц, а также на основании биологический отличий.

## INDEX

*abbreviatellus* WALK., *Crambus* 80  
*abjectella* SNELL., *Calamotropha* 12, 88, 89, 90  
*agrifusina* sp. n., *Calamotropha* 13, 108, 110, 111, 114, 130, 131  
*alcesta* sp. n., *Calamotropha* 9, 12, 64, 66, 130  
*albidorsatus* HMPS., *Crambus* 58, 59  
*albistrigella* (HMPS.), *Calamotropha* 11, 37  
*albistrigellus* HMPS., *Crambus* 37  
*Ancylolomia anticella* WALK. 84  
*Anerastiinae* 129  
*angulata* (SHIB.), *Calamotropha purella* f. 20  
*angulatus* SHIB., *Crambus* 20, 21  
*anticella* WALK., *Ancylolomia* 84  
*anticella* (WALK.), *Calamotropha* 12, 13, 15, 80, 84, 86  
*anticellus* (WALK.), *Crambus* 60, 66, 67, 71, 73, 79, 84  
*approximella* (PREIS.), *Calamotropha aureliella* ab. 26, 27  
*approximellus* PREIS., *Crambus aureliellus* ab. 26, 29  
*arachnophaga* (STRAND), *Calamotropha* 12, 14, 70  
*arachnophagus* STRAND, *Crambus* 70, 71  
*Araxes famulella* WALK. 38  
*argenteociliella* PAG., *Calamotropha* 13, 122  
*argenticilia* (HMPS.), *Calamotropha* 8, 11, 12, 39, 40  
*argenticilia* HMPS., *Crambus* 39  
*argyrostola* (HMPS.), *Calamotropha* 7, 9, 10, 13, 15, 121  
*argyrostola* HMPS., *Crambus* 121  
*asagirii* OKANO, *Calamotropha* 22, 24  
*asagirii* OKANO, *Calamotropha fulvifusalis* ssp. 22, 23, 24  
*athena* sp. n., *Calamotropha* 12, 105, 106, 130, 131  
*atkinsoni* ZELL., *Calamotropha* 2, 9, 11, 14, 60, 61, 64, 65, 82, 84, 85  
*atkinsoni* (ZELL.), *Crambus* 60  
*aureliella* (F. R.), *Calamotropha* 2, 5, 11, 13, 14, 25, 26, 27, 28  
*aureliellus* F. R., *Chilo* 25  
*aureliellus* (F. R.), *Crambus* 25  
*aurescellus* F. R., *Chilo* 25  
*aurifusalis* (CAR.), *Calamotropha purella* ssp. 20, 22  
*aurifusalis* CAR., *Crambus purellus* f. 20, 22  
*aurifusalis* CAR., *Crambus* 20, 22  
*azumai* BLESZ., *Calamotropha* 8, 10, 11, 14, 24  
*bicornutella* sp. n., *Calamotropha* 13, 108, 112, 113, 114, 130, 131  
*bipunctellus* SUZUKI, *Crambus* 34  
*boninella* (SHIB.), *Calamotropha* 11, 38  
*boninellus* SHIB., *Crambus* 38  
*bradleyi* BLESZ., *Calamotropha* 9, 12, 15, 96  
*brevilinella* (SOUTH), *Calamotropha* 11, 14, 47, 49, 50, 51  
*brevilinellus* SOUTH, *Crambus* 47, 49, 50, 52, 53  
*brevistrigella* (CAR.), *Calamotropha* 7, 8, 11, 12, 47, 52, 53,  
*brevistrigellus* CAR., *Crambus* 50, 52, 53, 54  
*calamosus* HMPS., *Conocrambus* 15, 18, 19  
*Calamotropha* ZELL. 1, 3, 5, 6, 7, 9, 10, 11, 13, 14, 15, 25, 31, 39, 40, 42, 44, 53, 55, 59, 61, 63, 65, 67, 75, 84, 85, 87, 90, 92, 93, 101, 102, 104, 108, 114, 119, 120, 122, 130  
— *abjectella* SNELL. 12, 88, 89, 90  
— *alcesta* sp. n. 9, 12, 64, 66, 130  
— *agrifusina* sp. n. 13, 108, 110, 111, 114, 130, 131  
— *albistrigella* (HMPS.) 11, 37  
— *anticella* (WALK.) 12, 13, 15, 80, 84, 86  
— *arachnophaga* (STRAND) 12, 14, 70  
— *argenteociliella* PAG. 13, 122  
— *argenticilia* (HMPS.) 8, 11, 39, 40  
— *argyrostola* (HMPS.) 7, 8, 9, 10, 13, 15, 121  
— *athena* sp. n. 12, 105, 106, 130, 131  
— *asagirii* OKANO 22  
— *atkinsoni* ZELL. 2, 9, 11, 12, 14, 60, 61, 64, 65, 82, 84, 85  
— — *ssp. malaica* ssp. n. 60, 61, 130, 131

*Calamotropha aureliella* (F. R.) 2, 5, 11, 13, 14, 25, 26, 27, 28  
 — — ssp. *kikuchii* OKANO 19, 27, 28  
 — — — ab. *approximella* (PREIS.) 26, 27  
 — — — ab. *fischeri* (OSTH.) 26, 29  
 — — — ab. *korbi* (CAR.) 20, 26, 29  
 — *azumai* BLESZ. 8, 10, 11, 14, 24  
 — *bicornutella* sp. n. 13, 108, 112, 113, 114, 130, 131  
 — *bominella* (SHIB.) 11, 38  
 — *bradleyi* BLESZ. 9, 12, 15, 96  
 — *brevilinella* (SOUTH) 11, 14, 47, 49, 50, 51  
 — *brevistrigella* (CAR.) 7, 8, 11, 12, 47, 52, 53  
 — *cleopatra* sp. n. 12, 102, 103, 130, 131  
 — *corticella* (HMPS.) 12, 63, 64, 82  
 — *danutae* sp. n. 8, 12, 101, 130, 131  
 — *delatalis* (WALK.) 12, 67, 69, 70  
 — *diakonoffi* sp. n. 12, 86, 87, 130, 131  
 — *dielota* MEYR. 9, 12, 13, 71, 72, 73, 74, 76, 77, 78, 79, 80, 81, 84, 85, 87, 90  
 — *diodonta* (HMPS.) 13, 114, 116, 118, 119  
 — *endopolia* (HMPS.) 12, 14, 82, 83  
 — *jamulella* (WALK.) 10, 11, 38, 39  
 — *formosella* sp. n. 11, 14, 33, 130  
 — *franki* (CAR.) 12, 14, 30, 31  
 — *fulvifusalis* (HMPS.) 5, 8, 10, 11, 14, 22, 24, 25  
 — — ssp. *asagirii* OKANO 23  
 — *fulvilineata* OKANO 26, 27, 28  
 — *fuscicostella* SNELL. 60, 61  
 — *fuscilineatella* (LUCAS) 11, 14, 93, 96  
 — *fuscivittalis* (HMPS.) 12, 92, 93  
 — *helioecausta* (WALL.) 12, 107, 108, 109, 110, 111, 112, 113, 114  
 — *hierichuntica* ZELL. 11, 14, 94, 95, 96, 98  
 — *indica* sp. n. 12, 14, 123, 124, 125, 130, 131  
 — *inouei* BLESZ. 20, 22  
 — *janusella* sp. n. 12, 13, 85, 130, 131  
 — *javaica* sp. n. 12, 73, 78, 79, 130, 131  
 — *josettae* sp. n. 11, 49, 50, 130  
 — *joskeaelia* sp. n. 13, 108, 111, 112, 130, 131  
 — *kuchleinii* sp. n. 13, 115, 116, 130, 131  
 — *latella* (SNELL.) 7, 8, 10, 12, 45, 46, 47, 48, 50, 55, 57  
 — *lattini* sp. n. 12, 90, 130, 131  
 — *leptogrammella* (MEYR.) 12, 67, 69, 70, 72  
 — *lupata* (MEYR.) 9, 11, 61, 62  
 — *martini* sp. n. 9, 12, 91, 130, 131  
 — *megalopunctata* sp. n. 13, 56, 57, 130, 131  
 — — ssp. *minuta* sp. n. 57, 130, 131  
 — *melanosticta* (HMPS.) 8, 11, 14, 40, 41, 42  
 — *melli* (CAR. & MEYR.) 12, 123, 124

*Calamotropha mimosa* sp. n. 12, 104, 130, 131  
 — *neurigrammalis* (HMPS.) 8, 12, 14, 44, 45  
 — *nigripunctellá* (LEECH) 11, 12, 14, 22, 47, 50, 51, 52, 53, 54, 55  
 — *niveicostella* (HMPS.) 12, 99, 100, 101  
 — *obliterans* (WALK.) 9, 11, 14, 32, 33, 34, 91  
 — *oculalis* (SNELL.) 8, 9, 10, 12, 122, 123, 124  
 — *okanoi* sp. n. 11, 14, 33, 34, 35, 76, 130  
 — *orontella* RAG. 93, 94, 95, 96  
 — *paludella* (HBN.) 2, 3, 6, 10, 11, 12, 13, 14, 15, 16, 18, 19, 20, 21, 68  
 — — ab. *digitata* (OSTH.) 16  
 — — ab. *durandi* (LUCAS) 15, 16  
 — — ab. *nivella* (REBEL) 16, 18  
 — *psaltrias* (MEYR.) 12, 108, 109, 111, 114  
 — *pseudodielota* sp. n. 12, 14, 73, 76, 77, 78, 81, 130  
 — *punctivenella* (HMPS.) 11, 14, 42  
 — *purella* (LEECH) 8, 10, 11, 14, 18, 19, 20, 21, 24  
 — — ssp. *aurifusalis* (CAR.) 22  
 — *robustella* SNELL. 12, 90, 103, 104  
 — *saturnella* sp. n. 12, 66, 84, 130  
 — *sattleri* sp. n. 9, 12, 14, 56, 130  
 — *schönnmanni* sp. n. 13, 115, 118, 119, 130, 131  
 — *schwarzii* sp. n. 12, 14, 73, 81, 130, 131  
 — *shichito* (MARUMO) 11, 74, 75  
 — *sienkiewiczi* sp. n. 12, 47, 52, 54, 55, 56, 130  
 — *stachi* sp. n. 7, 98, 130, 131  
 — *subalcesta* sp. n. 12, 66, 130  
 — *subdiadonta* sp. n. 13, 115, 116, 117, 118  
 — *subfamulella* (CAR. & MEYR.) 12, 71, 73, 75, 77  
 — *subterminella* (WIL. & SOUTH) 11, 36  
 — *sumatraella* sp. n. 12, 14, 73, 74, 85, 130  
 — *tonalis* (WALK.) 11, 14  
 — *torpidella* (ZELL.) 12, 87, 88  
 — *tripartita* (HMPS.) 8, 13, 120  
 — *unicorella* (ZELL.) 12, 14, 73, 78, 81, 82, 84, 88  
 — *venera* sp. n. 12, 82, 130  
 — *wallengreni* sp. n. 12, 108, 109, 110, 111, 114  
 — *xanthypa* sp. n. 12, 100, 130, 131  
 — *yamanakai* INOUE 11, 14, 29, 30  
*candidifer* WALK., *Crambus* 32, 33  
*carpherus* HMPS., *Crambus* 16, 18, 19  
*calamosus* HMPS., *Conocrambus* 15, 16, 18  
*canicostalis* (HMPS.), *Cephis* 96  
*chionostola* HMPS., *Crambus* 20, 21, 22

*Cephis canicostalis* (HMPS.) 96  
*cleopatra* sp. n., *Calamotropha* 12, 102, 103, 130, 131  
*Chilo* ZCK. 5, 6, 7, 8, 15, 39, 88  
 — *aureliellus* F. R. 25  
 — *aurescellus* F. R. 25  
 — *leptogrammellus* MEYR. 19, 67, 68, 70  
 — *paludellus* (HBN.) 16  
 — *paramattellus* MEYR. 16, 19, 67, 68, 69  
 — *torpidellus* ZELL. 3, 87  
 — *unicolorellus* ZELL. 3, 79, 81  
*Conocrambus calamosus* HMPS. 15, 18, 19  
*corticella* (HMPS.), *Calamotropha* 12, 63, 64, 82  
*corticellus* HMPS., *Crambus* 63  
*Crambidae* 1, 3, 5, 9, 10, 125, 126, 129, 130  
*Crambinae* 125, 127, 128, 129  
*Crambites* 129  
*Crambus* F. 2, 3, 5, 6, 7, 8, 15, 125, 126, 128  
 — *abbreviatellus* WALK. 80  
 — *albidorsatus* HMPS. 58, 59  
 — *albistrigellus* HMPS. 37  
 — *angulatus* SHIB. 20, 21  
 — *anticellus* (WALK.) 60, 66, 67, 71, 73, 79, 84  
 — *arachnophagus* STRAND 70, 71  
 — *argenticilia* HMPS. 39  
 — *argyrostola* HMPS. 121  
 — *atkinsoni* (ZELL.) 60  
 — *aureliellus* (F. R.) 25  
 — — — ab. *fisheri* Osth. 26  
 — — — ab. *approximellus* PREIS. 26, 29  
 — — — ab. *koryi* CAR. 25, 28, 29  
 — *aurifusalis* CAR. 20, 22  
 — *bipunctellus* SUZUKI 34  
 — *boninellus* SHIB. 38  
 — *brevilinellus* SOUTH 47, 49, 50, 52, 53  
 — *brevistrigellus* CAR. 50, 52, 53, 54  
 — *candidifer* WALK. 32, 33  
 — *carpherus* HMPS. 16, 18, 19  
 — *chionostola* HMPS. 20, 21, 22  
 — *corticellus* HMPS. 63  
 — *delatalis* WALK. 69  
 — *dielota* MEYR. 71  
 — *dielotus* MEYR. 71, 73  
 — *diodonta* HMPS. 114  
 — *distictellus* HMPS. 77  
 — *distinctellus* HMPS. 75, 77  
 — *distinctellus* LEECH 77  
 — *endopolia* HMPS. 83  
 — *famulellus* (WALK.) 38, 39  
 — *flaviguttellus* WIL. & SOUTH 19, 21, 22  
 — *franki* CAR. 30  
 — *fulvifusalis* HMPS. 22, 24  
 — *fuscilineatellus* LUCAS 93, 94  
 — *fuscivittalis* HMPS. 92  
 — *heliocaustus* WALL. 107  
 — *hierichunticus* (ZELL.) 94  
 — *hierocheunticus* (ZELL.) 94  
 — *holodryas* MEYR. 60, 61  
 — *hortuellus* (HBN.) 28  
 — *hönei* CAR. & MEYR. 50, 52  
 — *latellus* SNELL. 45, 50, 54, 55, 56  
 — *leptogrammellus* (MEYR.) 67  
 — *leucaniellus* ZERNY 94, 96  
 — *lupatus* MEYR. 61  
 — *melanosticta* HMPS. 41  
 — *melli* CAR. & MEYR. 124, 125  
 — *neurigrammalis* HMPS. 44, 45  
 — *nigripunctellus* LEECH 50, 52  
 — *niveicostellus* HMPS. 99  
 — *obliterans* WALK. 32, 33, 34  
 — *oculalis* SNELL. 122, 123  
 — *orontellus* (RAG.) 94  
 — *paludellus* (HBN.) 16, 26, 27  
 — — — ab. *durandi* LUCAS 16, 19  
 — — — ab. *digitatus* Osth. 16  
 — — — ab. *nivellus* REBEL 16, 19  
 — *paramattellus* (MEYR.) 16, 67  
 — *peralbellus* HMPS. 41  
 — *psaltrias* MEYR. 108, 109  
 — *punctivenellus* HMPS. 42, 43  
 — *purellus* LEECH 19, 20, 22  
 — — f. *aurifusalis* CAR. 20, 22  
 — *shibuyaе* MATS. 22, 24  
 — *shichito* MARUMO 74  
 — *subfamulellus* CAR. & MEYR. 75  
 — *subterminellus* WIL. & SOUTH 36  
 — *tonsalis* (WALK.) 58  
 — *tripartitus* HMPS. 120  
 — *typhivorus* MEYR. 16, 18, 19  
 — *unicolorellus* (ZELL.) 79  
*danutae* sp. n., *Calamotropha* 8, 12, 101, 130, 131  
*delatalis* (WALK.), *Calamotropha* 12, 67, 69, 70  
*delatalis* WALK., *Crambus* 69  
*diakonoffi* sp. n., *Calamotropha* 12, 86, 87, 130, 131  
*Diatraea* GUIL. 5, 6, 7, 19  
 — *luteella* (MOTSCH.) 96  
 — *parramattella* (MEYR.) 16  
*dielota* MEYR., *Calamotropha* 9, 12, 13, 71, 72, 73, 74, 76, 77, 78, 79, 80, 81, 84, 85, 87, 90  
*dielota* (MEYR.), *Crambus* 71  
*dielotus* (MEYR.), *Crambus* 71, 73  
*digitata* (Osth.), *Calamotropha paludella* ab. 17

*digitatus* OSTH., *Crambus paludellus* ab. 16  
*diodonta* (HMPS.), *Calamotropha* 13, 114, 116, 118, 119  
*diodonta* HMPS., *Crambus* 114  
*distictellus* HMPS., *Crambus* 77  
*distinctellus* HMPS., *Crambus* 75, 77  
*distinctellus* LEECH, *Crambus* 77  
*durandi* (LUCAS), *Calamotropha paludella* ab. 16, 17  
*durandi* LUCAS, *Crambus paludellus* ab. 16  
*endopolia* (HMPS.), *Calamotropha* 12, 14, 83  
*endopolia* HMPS., *Crambus* 83  
*famulella* WALK., *Araxes* 38  
*famulella* (WALK.), *Calamotropha* 10, 11, 38, 39  
*famulellus* (WALK.), *Crambus* 38, 39  
*fischeri* (OSTH.), *Calamotropha aureliella* ab. 26, 29  
*fischeri* OSTH., *Crambus aureliellus* ab. 26  
*flaviguttellus* WIL. & SOUTH., *Crambus* 19, 21, 22  
*formosella* sp. n., *Calamotropha* 11, 14, 33, 130  
*franki* (CAR.), *Calamotropha* 12, 30, 31  
*franki* CAR., *Crambus* 30  
*fulvifusalis* (HMPS.), *Calamotropha* 5, 8, 10, 11, 14, 22, 24, 25  
*fulvifusalis* HMPS., *Crambus* 22, 24  
*fulvilineata* OKANO, *Calamotropha* 26, 27, 28  
*fuscicostella* SNELL., *Calamotropha* 60, 61  
*fuscilineatella* (LUCAS), *Calamotropha* 11, 14, 93, 96  
*fuscelineatellus* LUCAS, *Crambus* 93, 94  
*fuscivittalis* (HMPS.), *Calamotropha* 12, 92, 93  
*fuscivittalis* HMPS., *Crambus* 92  
*Gallerinae* 129  
*heliocausta* (WALL.), *Calamotropha* 12, 107, 108, 109, 110, 111, 112, 113, 114  
*heliocaustrus* WALL., *Crambus* 107  
*Heterocera* 127, 129  
*hierichuntica* ZELL., *Calamotropha* 11, 14, 94, 95, 96, 98  
*hierochuntica* ZELL., *Calamotropha* 94, 96  
*hierochunticus* (ZELL.), *Crambus* 94  
*holodryas* MEYR., *Crambus* 60, 61  
*hortuellus* (HBN.), *Crambus* 28  
*hönei* CAR. & MEYR., *Crambus* 50, 52  
*indica* sp. n., *Calamotropha* 12, 14, 123, 124, 125, 130, 131  
*inouei* BŁESZ., *Calamotropha* 20, 22  
*janusella* sp. n., *Calamotropha* 12, 13, 85, 130, 131  
*javaica* sp. n., *Calamotropha* 12, 73, 78, 79, 130, 131  
*josettae* sp. n., *Calamotropha* 11, 49, 50, 130  
*joskeaelia* sp. n., *Calamotropha* 13, 108, 111, 112, 130, 131  
*kikuchii* OKANO, *Calamotropha* 26, 27  
*kikuchii* OKANO, *Calamotropha aureliella* ssp. 19, 27, 28  
*korbi* (CAR.), *Calamotropha aureliella* ab. 20, 26, 29  
*kuchleinii* sp. n., *Calamotropha* 115, 116  
*latella* (SNELL.), *Calamotropha* 7, 8, 10, 12, 45, 46, 47, 48, 50, 55, 57  
*latellus* SNELL., *Crambus* 45, 50, 54, 55, 56  
*lattini* sp. n., *Calamotropha* 12, 90, 130, 131  
*Lepidoptera* 1, 3, 9, 125, 126, 127, 128, 129  
*leptogrammella* (MEYR.), *Calamotropha* 12, 67, 69, 70, 72  
*leptogrammellus* MEYR., *Chilo* 19, 67, 68, 70  
*leptogrammellus* (MEYR.), *Crambus* 67  
*leucaniellus* ZERNY, *Crambus* 94, 96  
*lupata* (MEYR.), *Calamotropha* 9, 11, 61, 62  
*lupatus* MEYR., *Crambus* 61  
*luteella* (MOTSCH.), *Diatraea* 96  
*malaica* ssp. n., *Calamotropha atkinsoni* ssp. 60  
*martini* sp. n., *Calamotropha* 9, 12, 91, 130, 131  
*megalopunctata* sp. n., *Calamotropha* 13, 56, 57, 130, 131  
*melanosticta* (HMPS.), *Calamotropha* 8, 11, 14, 40, 41, 42  
*melanosticta* HMPS., *Crambus* 41  
*melli* (CAR. & MEYR.), *Calamotropha* 12, 123, 124  
*melli* CAR. & MEYR., *Crambus* 124, 125  
*Mestolobes* BUTL. 4  
*Microlepidoptera* 125, 128  
*Micropterygidae* 129  
*Microptera* 129  
*mimosa* sp. n., *Calamotropha* 12, 104, 130, 131  
*minuta* ssp. n., *Calamotropha megalopunctata* ssp. 57, 130, 131  
*Myzea* WALK. 3, 15, 59  
— *tonsalis* WALK. 3, 58, 59  
*neurigrammalis* (HMPS.), *Calamotropha* 8, 12, 14, 44, 45  
*neurigrammalis* HMPS., *Crambus* 44, 45  
*nigripunctella* (LEECH), *Calamotropha* 11, 12, 14, 22, 47, 50, 51, 52, 53, 54, 55  
*nigripunctellus* LEECH, *Crambus* 50, 52  
*niveicostella* (HMPS.), *Calamotropha* 12, 99, 100, 101  
*niveicostellus* HMPS., *Crambus* 99  
*nivella* (REBEL), *Calamotropha paludella* ab. 17, 18

*nivellus* REBEL, *Crambus paludellus* ab. 16, 19  
*obliterans* (WALK.), *Calamotropha* 9, 11, 14,  
 32, 33, 34, 91  
*obliterans* WALK., *Crambus* 32, 33, 34  
*obtusellus* STT., *Chilo* 15  
*oculalis* (SNELL.), *Calamotropha* 8, 9, 10, 12,  
 122, 123, 124  
*oculalis* SNELL., *Crambus* 122, 123  
*okanoi* sp. n., *Calamotropha* 11, 14, 33, 34,  
 35, 76, 130  
*orontella* RAG., *Calamotropha* 93, 94, 95, 96  
*orontellus* (RAG.), *Crambus* 94  
*Orthomecyna* BUTL. 4  
*paludella* (HBN.), *Calamotropha* 2, 3, 6, 10,  
 11, 13, 14, 15, 16, 18, 19, 20, 21, 68  
*paludella* HBN., *Tinea* 2, 16  
*paludellus* (HBN.), *Chilo* 16  
*paludellus* (HBN.), *Crambus* 16, 26, 27  
*paramattellus* MEYR., *Chilo* 16, 19, 67, 68, 69  
*paramattellus* (MEYR.), *Crambus* 16, 67  
*Pediasia* HBN. 80  
*peralbellus* HMPS., *Crambus* 41  
*Phalaenae* 127  
*Phycitinae* 129  
*Phycitidae* 4  
*psaltrias* (MEYR.), *Calamotropha* 12, 108, 109,  
 111, 114  
*psaltrias* MEYR., *Crambus* 108, 109  
*Pseudobissetia terrestrella* (CHR.) 95  
*pseudodielota* sp. n., *Calamotropha* 12, 14, 73,  
 76, 77, 78, 81, 130  
*punctivenella* (HMPS.), *Calamotropha* 11, 14, 42  
*punctivenellus* HMPS., *Crambus* 42, 43  
*purella* (LEECH), *Calamotropha* 8, 10, 11, 14,  
 18, 19, 20, 21, 24  
*purellus* LEECH, *Crambus* 19, 20, 22  
*Pterophoridae* 127  
*Pyralidae* 125, 127, 128, 129  
*Pyralididae* 125, 128, 129  
*Pyralidina* 129  
*Pyralidoidea* 127  
*Pyraloidea* 4, 129  
*Pyraustidae* 4  
*robustella* SNELL., *Calamotropha* 12, 90, 103,  
 104  
*sattleri* sp. n., *Calamotropha* 9, 12, 14, 56, 130  
*saturnella* sp. n., *Calamotropha* 12, 66, 84, 130  
*Schoenobiinae* 127, 129  
*schönnmanni* sp. n., *Calamotropha* 13, 115,  
 118, 119  
*schwarzii* sp. n., *Calamotropha* 12, 14, 73, 81,  
 130, 131  
*shibuyaiae* MATS., *Crambus* 22, 24  
*shichito* (MARUMO), *Calamotropha* 11, 74, 75  
*shichito* MARUMO, *Crambus* 74  
*sienkiewiczi* sp. n., *Calamotropha* 12, 47, 52,  
 54, 55, 56  
*Siginae* 127  
*Scopariidae* 4  
*stachi* sp. n., *Calamotropha* 7, 98, 130, 131  
*subalcesta* sp. n., *Calamotropha* 12, 66, 130  
*subdiiodonta* sp. n., *Calamotropha* 13, 115, 116,  
 117, 118, 130, 131  
*subfamulella* (CAR. & MEYR.), *Calamotropha*  
 12, 71, 73, 75, 77  
*subfamulellus* CAR. & MEYR., *Crambus* 75  
*subterminella* (WIL. & SOUTH), *Calamotropha*  
 11, 36  
*subterminellus* WIL. & SOUTH, *Crambus* 36  
*sumatraella* sp. n., *Calamotropha* 12, 14, 73,  
 74, 85, 130  
*Thyrididae* 129  
*Tinea* L. 15  
 — *paludella* HBN. 2, 15  
*tonalis* (WALK.), *Calamotropha* 11, 14, 58, 59  
*tonalis* WALK., *Myzea* 3, 58, 59  
*torpidella* (ZELL.), *Calamotropha* 12, 87  
*torpidellus* ZELL., *Chilo* 3, 87, 88  
*Tortricites* 129  
*tripartita* (HMPS.), *Calamotropha* 8, 13, 120  
*tripartitus* HMPS., *Crambus* 120  
*typhivorus* MEYR., *Crambus* 18, 19  
*unicorella* (ZELL.), *Calamotropha* 12, 14, 73,  
 78, 81, 82, 84, 88  
*unicorellus* ZELL., *Chilo* 3, 79, 81  
*unicorellus* (ZELL.), *Crambus* 79  
*venera* sp. n., *Calamotropha* 12, 82, 130  
*wallengreni* sp. n., *Calamotropha* 12, 108, 109,  
 110, 111, 114, 130, 131  
*xanthypa* sp. n., *Calamotropha* 12, 100, 130,  
 131  
*yamanakai* INOUE, *Calamotropha* 11, 14, 29, 30

PLATES

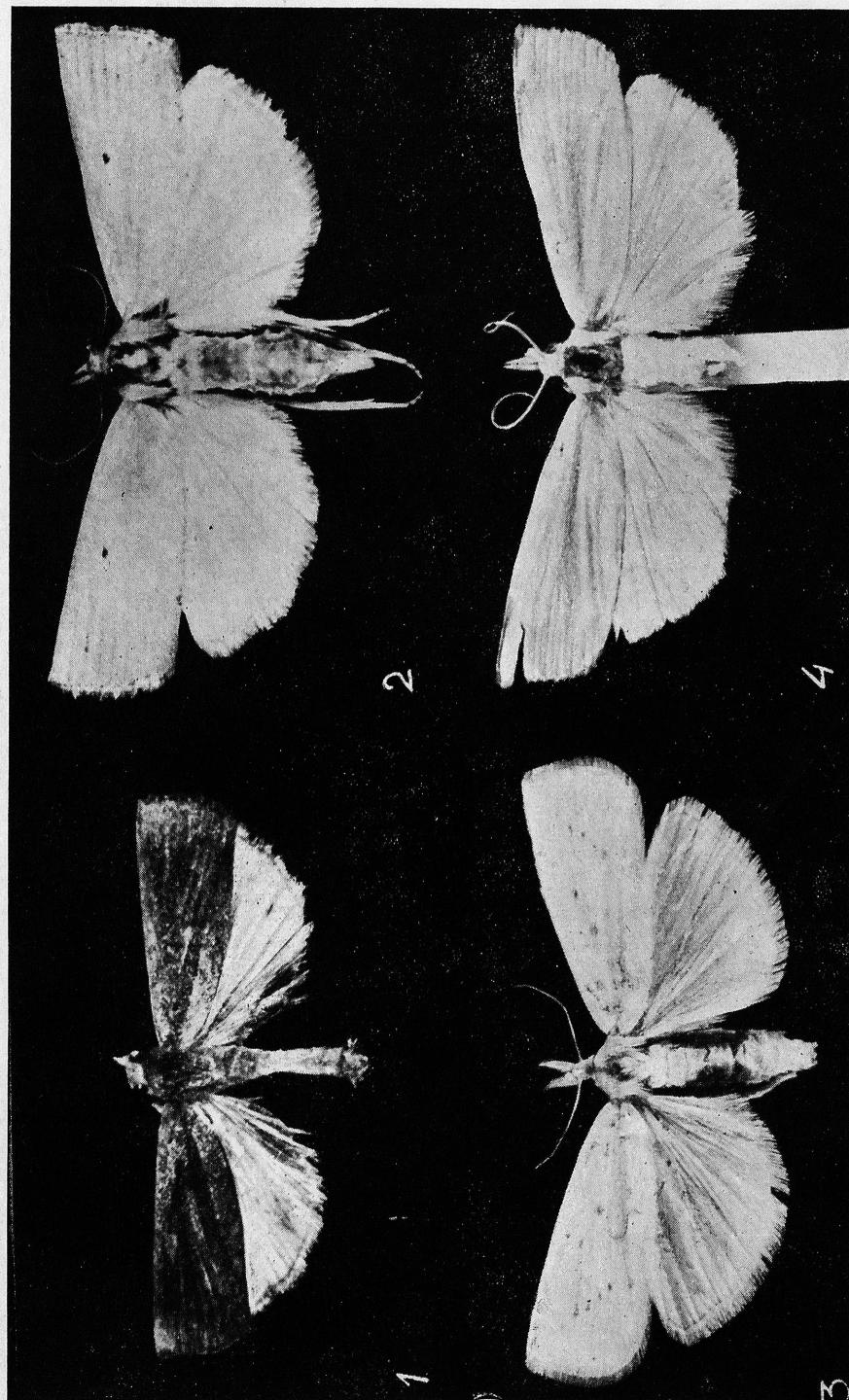
Plate XX

Fig. 1. *Calamotropha paludella* (HBN.). ♂. Syria.

Fig. 2. *Calamotropha paludella* (HBN.). ♀. Afganistan. Typoid of *C. paludella* ssp. *afghanistanica* BLESZ.

Fig. 3. *Calamotropha paludella* ab. *nivella* (REBEL). ♀. Slavonia. Syntype.

Fig. 4. *Calamotropha paludella* (HBN.). ♂. Transvaal. Holotype of *Conocrambus calamosus* Hmps.



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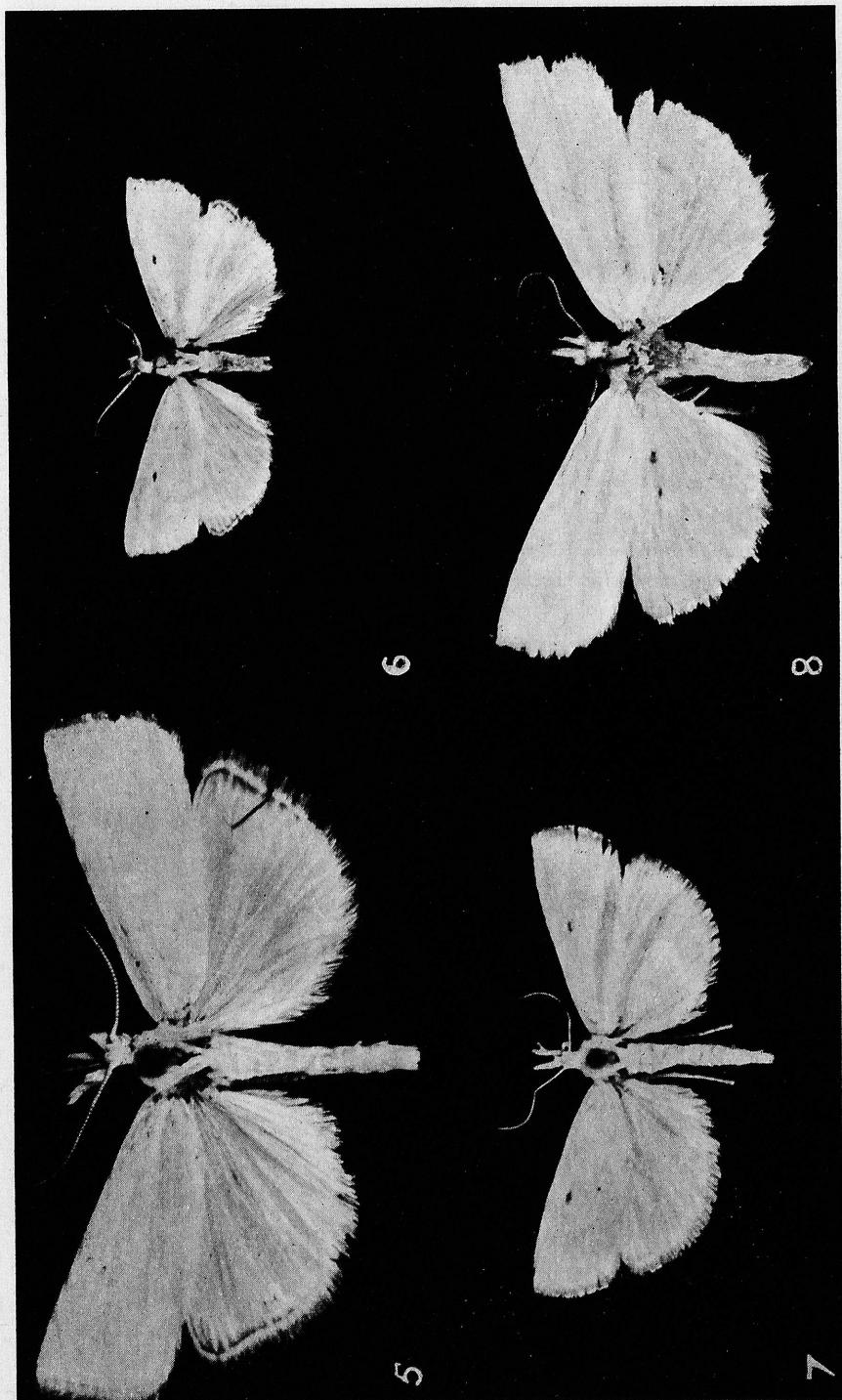
Plate XXI

Fig. 5. *Calamotropha purella* (LEECH). ♂. Manchuria.

Fig. 6. *Calamotropha purella* (LEECH). ♂. Manchuria.

Fig. 7. *Calamotropha purella* ssp. *aurifusalis* (CAR.). Manchuria.

Fig. 8. *Calamotropha azumai* BLESZ. ♀. Nishinomiya, Japan. Holotype.



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Plate XXII

Fig. 9. *Calamotropha aureliella* (F. R.). ♂. Hungary.  
Fig. 10. *Calamotropha aureliella* (F. R.). ♀. Hungary.  
Fig. 11. *Calamotropha aureliella* ab. *fischeri* (OSTH.). ♂. Hungary.  
Fig. 12. *Calamotropha aureliella* ab. *korbi* (CAR.). ♀. Lectotype. Amur.

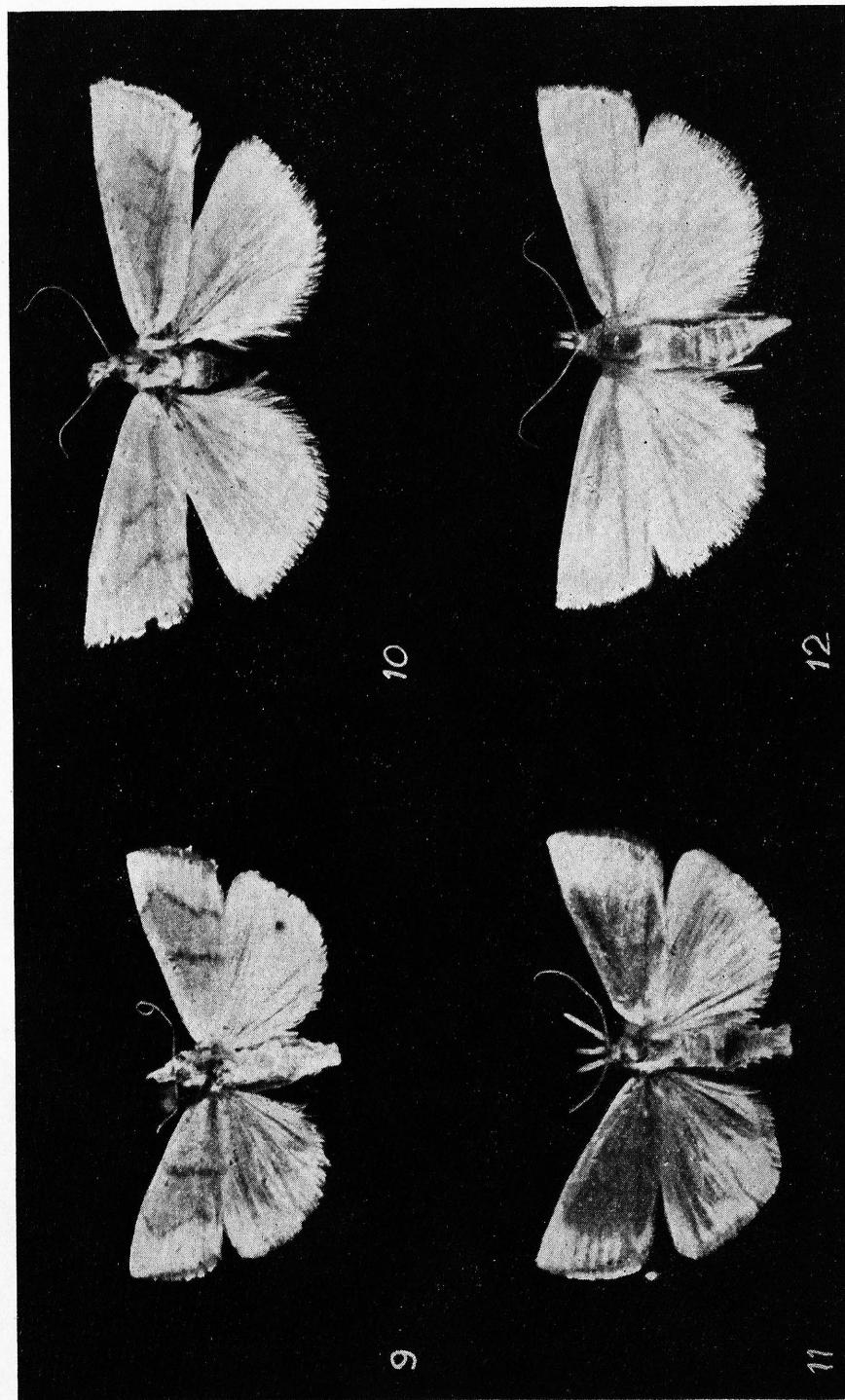


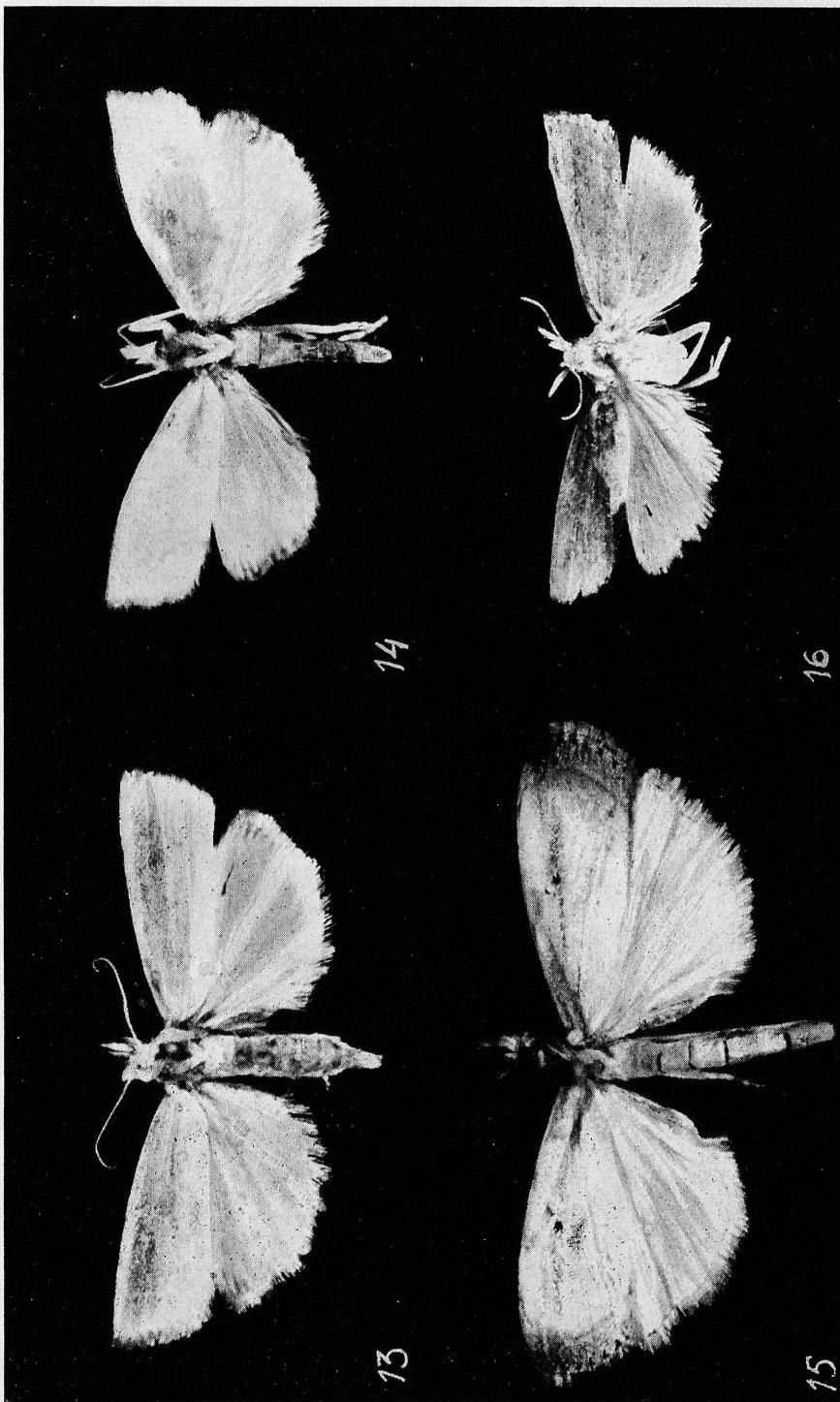
Plate XXIII

Fig. 13. *Calamotropha fulvifusalis* (HMPS.). ♀. Amur. Lectotype.

Fig. 14. *Calamotropha fulvifusalis* ssp. *asagirii* Okano. ♂. Iwate Pref., Japan.

Fig. 15. *Calamotropha franki* (CAR.). ♀. Kwanhsien, China. Holotype.

Fig. 16. *Calamotropha arachnophaga* (STRAND). ♀. Anping, Formosa. Lectotype.



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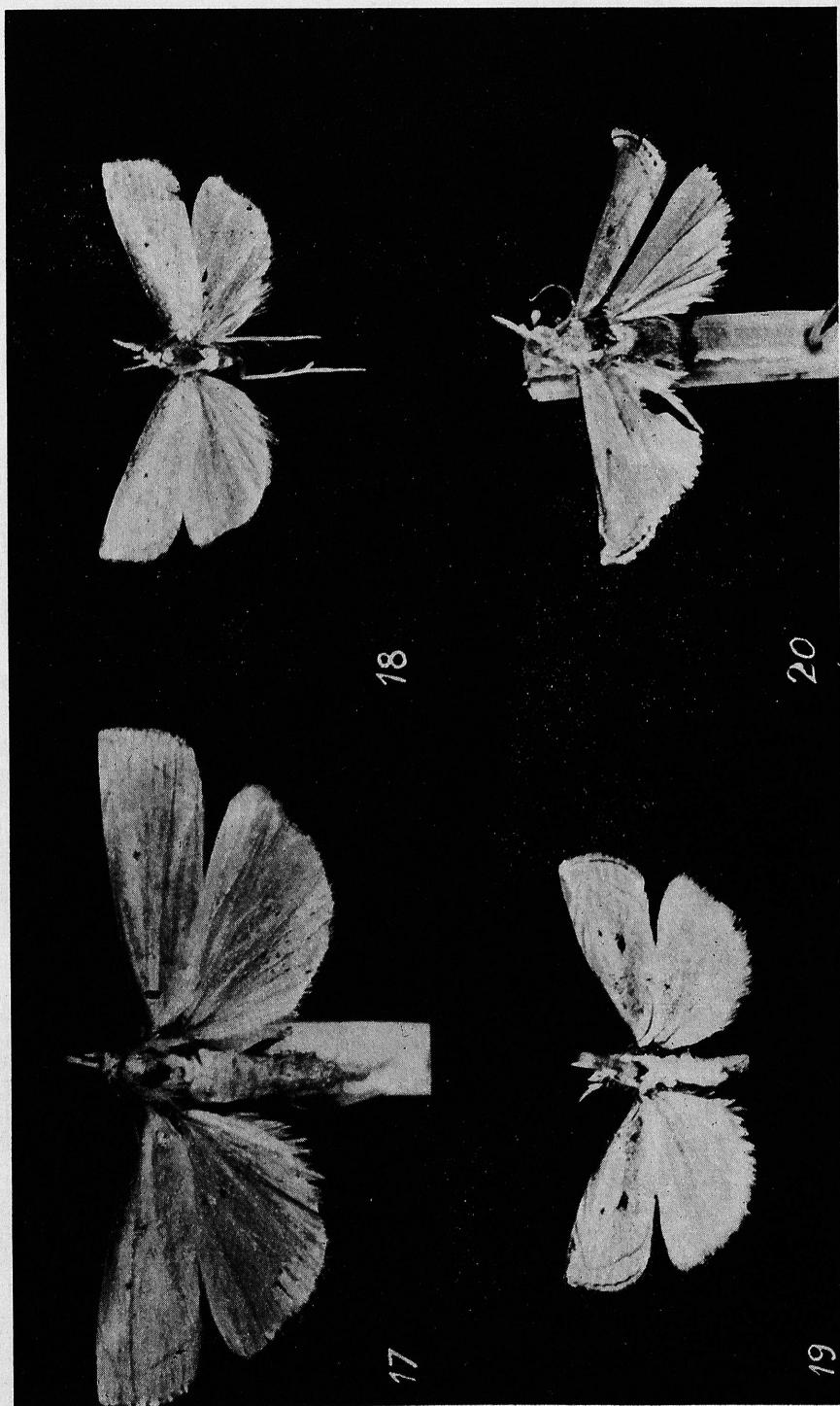
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Acta Zoologica nr 7

10

## Plate XXIV

Fig. 17. *Calamotropha subterminella* (WIL. & SOUTH). ♀. Formosa. Typoid.  
Fig. 18. *Calamotropha formosella* sp. n. ♂. Formosa. Holotype.  
Fig. 19. *Calamotropha okanoi* sp. n. ♂. Fujisawa, Japan, Typoid.  
Fig. 20. *Calamotropha oblitterans* (WALK.). ♂. Borneo.



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10\*

Plate XXV

Fig. 21. *Calamotropha delatalis* (WALK.). ♂. Moreton Bay, Australia. Holotype.  
Fig. 22. *Calamotropha delatalis* (WALK.). ♂. Sydney.  
Fig. 23. *Calamotropha leptogrammella* (MEYR.). ♂. Sydney. Lectotype.  
Fig. 24. *Calamotropha leptogrammella* (MEYR.). ♀. Sydney. Lectotypoid.

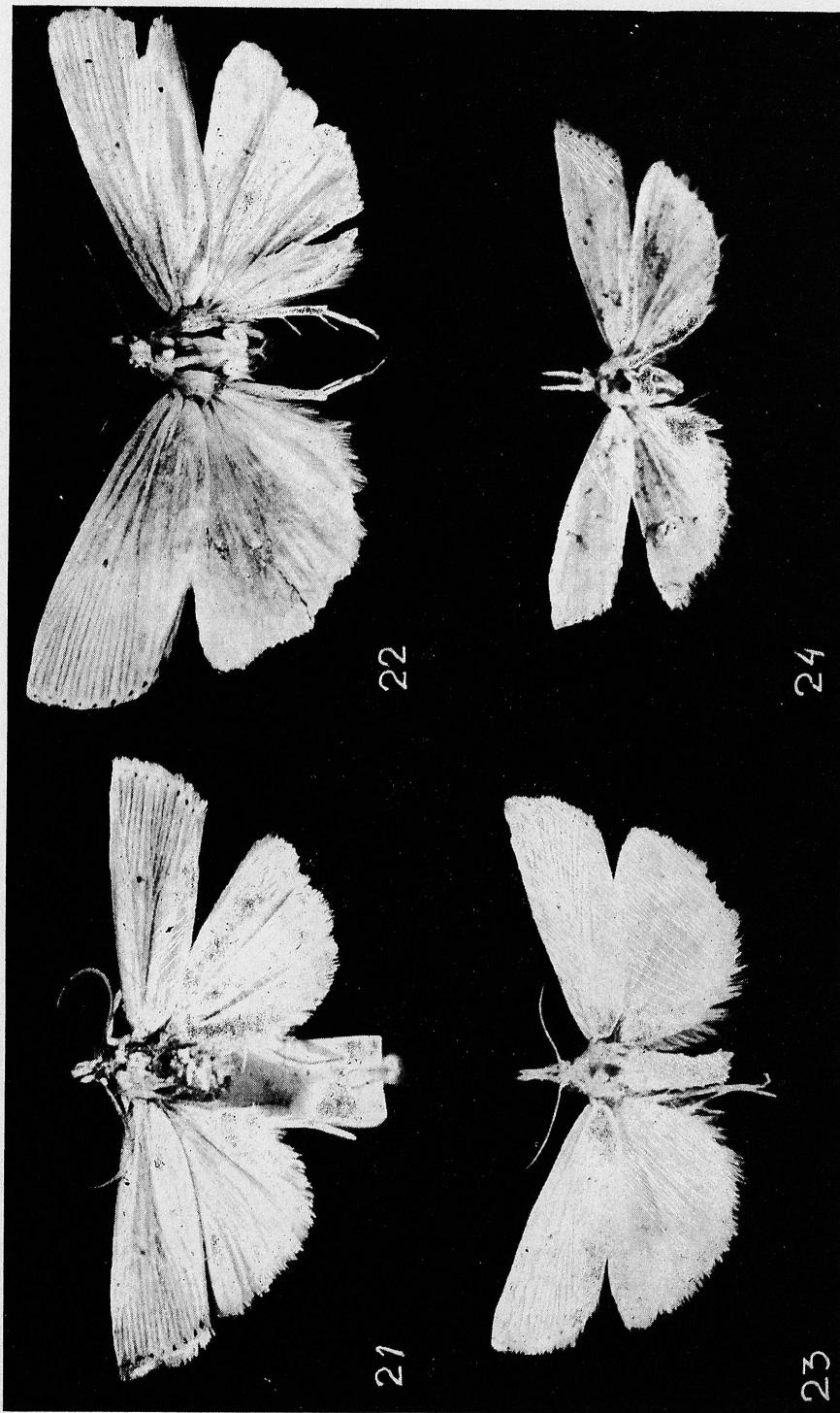


Plate XXVI

Fig. 25. *Calamotropha diodonta* (HMPS.). ♀. Nigeria. Holotype.  
Fig. 26. *Calamotropha kuchleini* sp. n. ♂. Tanganyika-Territory. Typoid.  
Fig. 27. *Calamotropha subdiodonta* sp. n. ♀. Gabon. Holotype.  
Fig. 28. *Calamotropha schönnmanni* sp. n. ♀. Tanganyika-Territory. Typoid.

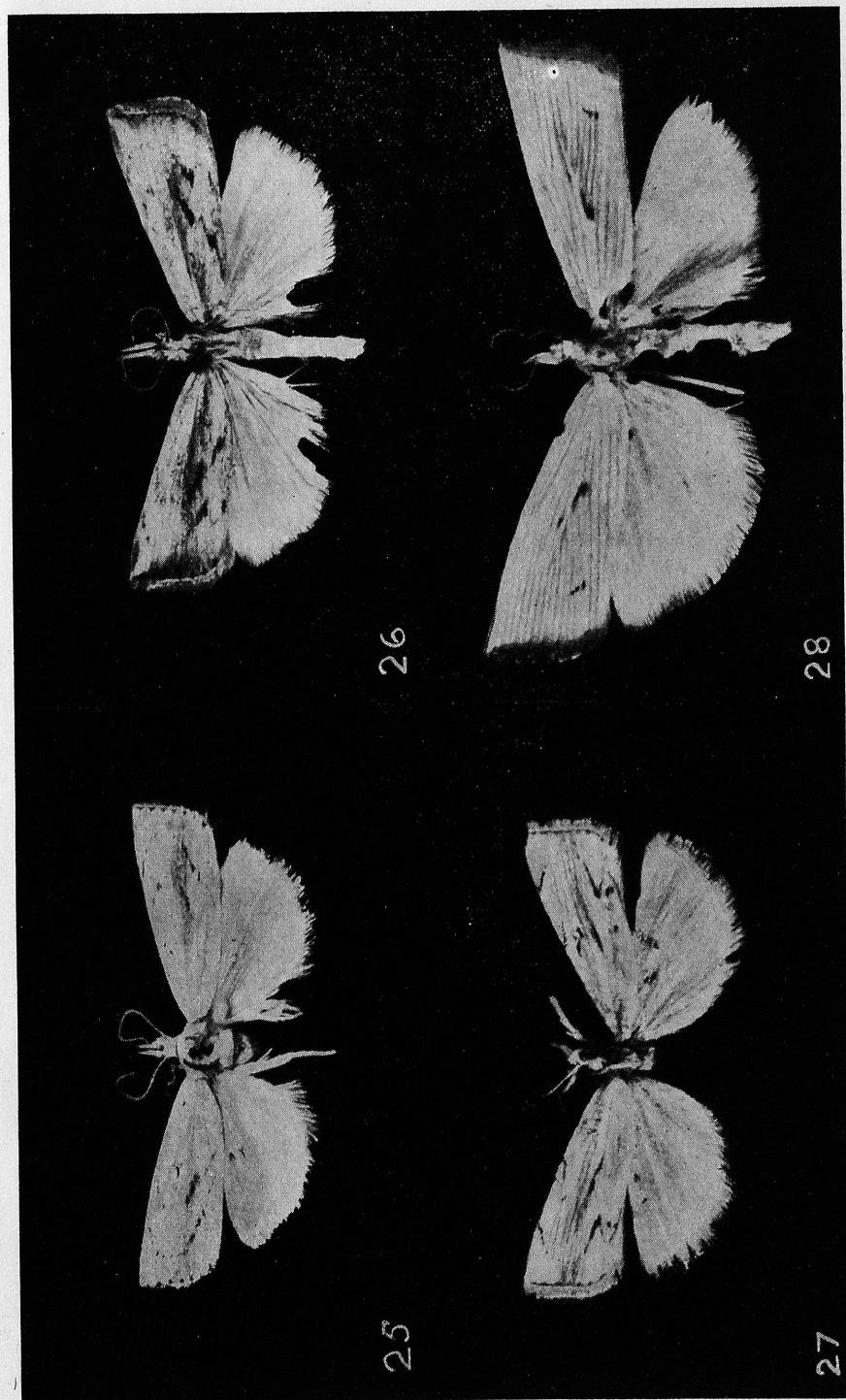


Plate XXVII

Fig. 29. *Calamotropha brevistrigella* (CAR.). ♂. China.  
Fig. 30. *Calamotropha argenticilia* (HMPS.). ♂. Ceylon. Lectotypoid.  
Fig. 31. *Calamotropha melanosticta* (HMPS.). ♂. Ceylon.  
Fig. 32. *Calamotropha punctivenella* (HMPS.). ♂. Ceylon.

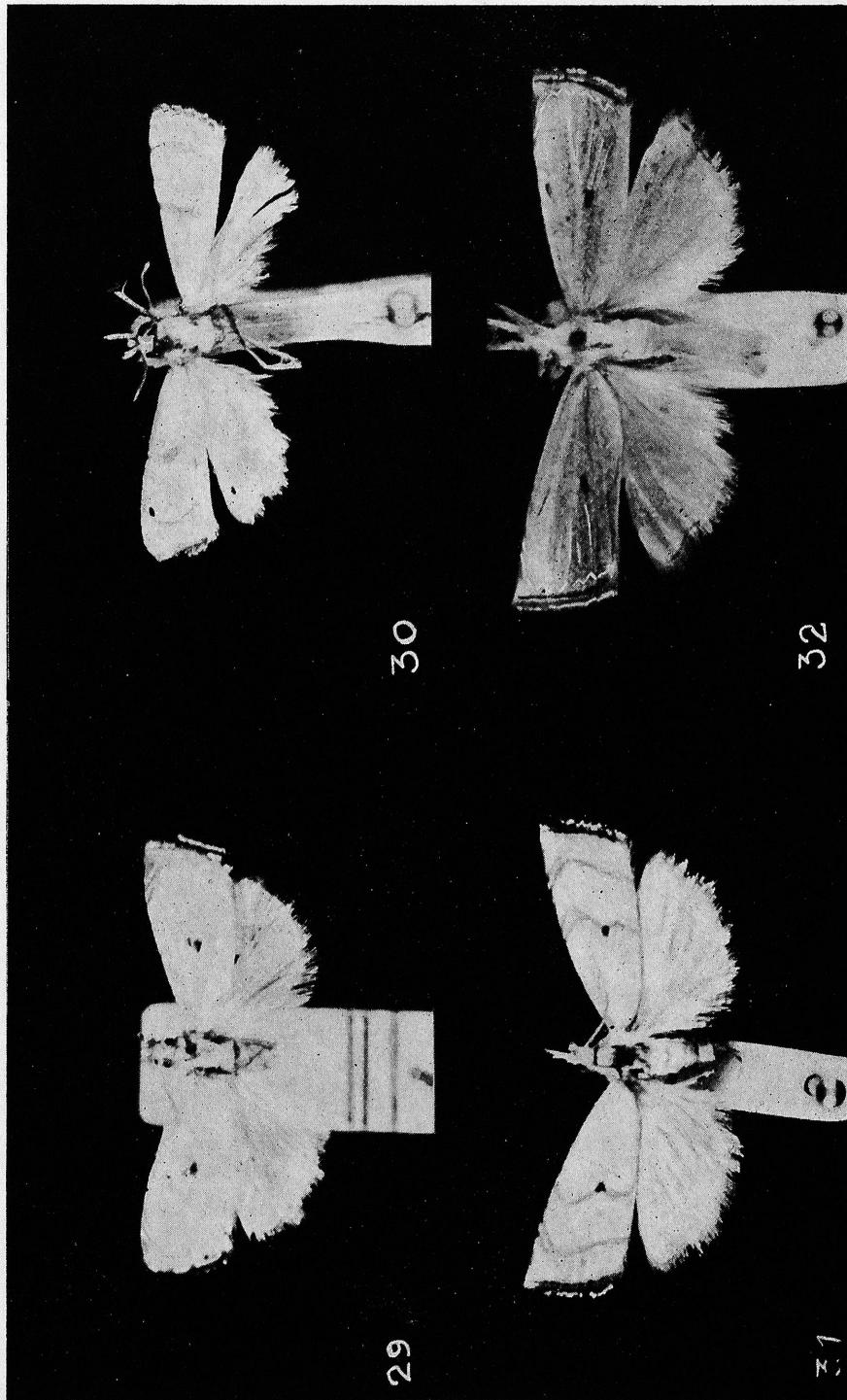


Plate XXVIII

Fig. 33. *Calamotropha latella* (SNELL.). ♂. Khasi Hills, India.

Fig. 34. *Calamotropha latella* (SNELL.). ♀. Khasi Hills, India.

Fig. 35. *Calamotropha brevilinella* (SOUT.). ♀. Chang-Yang, China. Lectotypoid.

Fig. 36. *Calamotropha nigripunctella* (LIECHI). ♂. Shihoku, Japan.



Plate XXIX

Fig. 37. *Calamotropha josettae* sp. n. ♂. Omei-Shan, China. Typoid.

Fig. 38. *Calamotropha megalopunctata* sp. n. ♀. Tambura, Southern Bahr-el-Ghazal, Africa. Holotype.

Fig. 39. *Calamotropha sienkiewiczi* sp. n. ♀. Kwanhsien, China. Typoid.

Fig. 40. *Calamotropha sattleri* sp. n. ♂. Formosa. Holotype.



Plate XXX

Fig. 41. *Calamotropha alcesta* sp. n. ♂. Nilgiris, India. Holotype.  
Fig. 42. *Calamotropha alcesta*, sp. n. ♀. Darjeeling, India. Typoid.  
Fig. 43. *Calamotropha subalcesta* sp. n. ♀. Formosa. Holotype.  
Fig. 44. *Calamotropha saturnella* sp. n. ♂. Travancoore, India. Holotype.

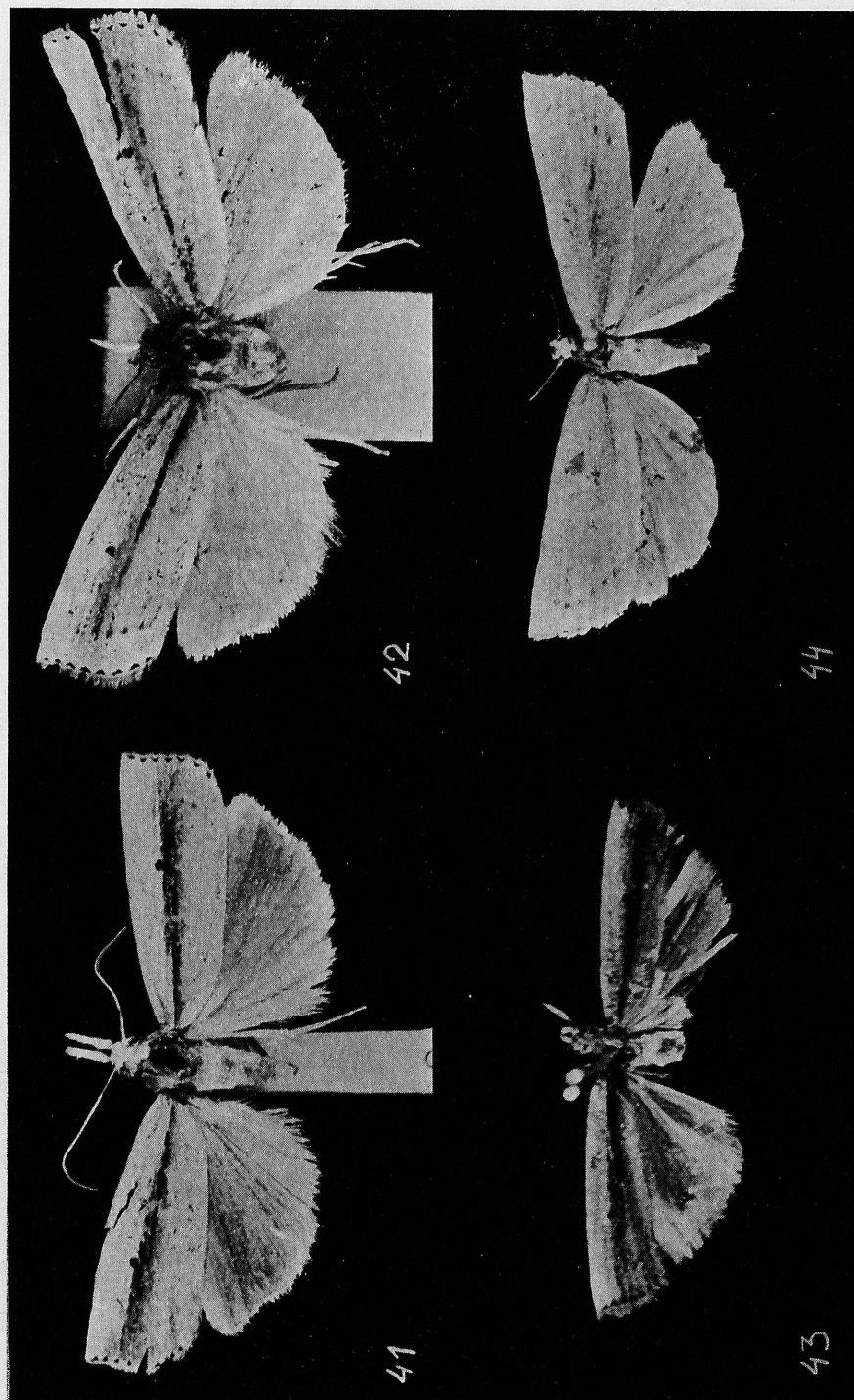


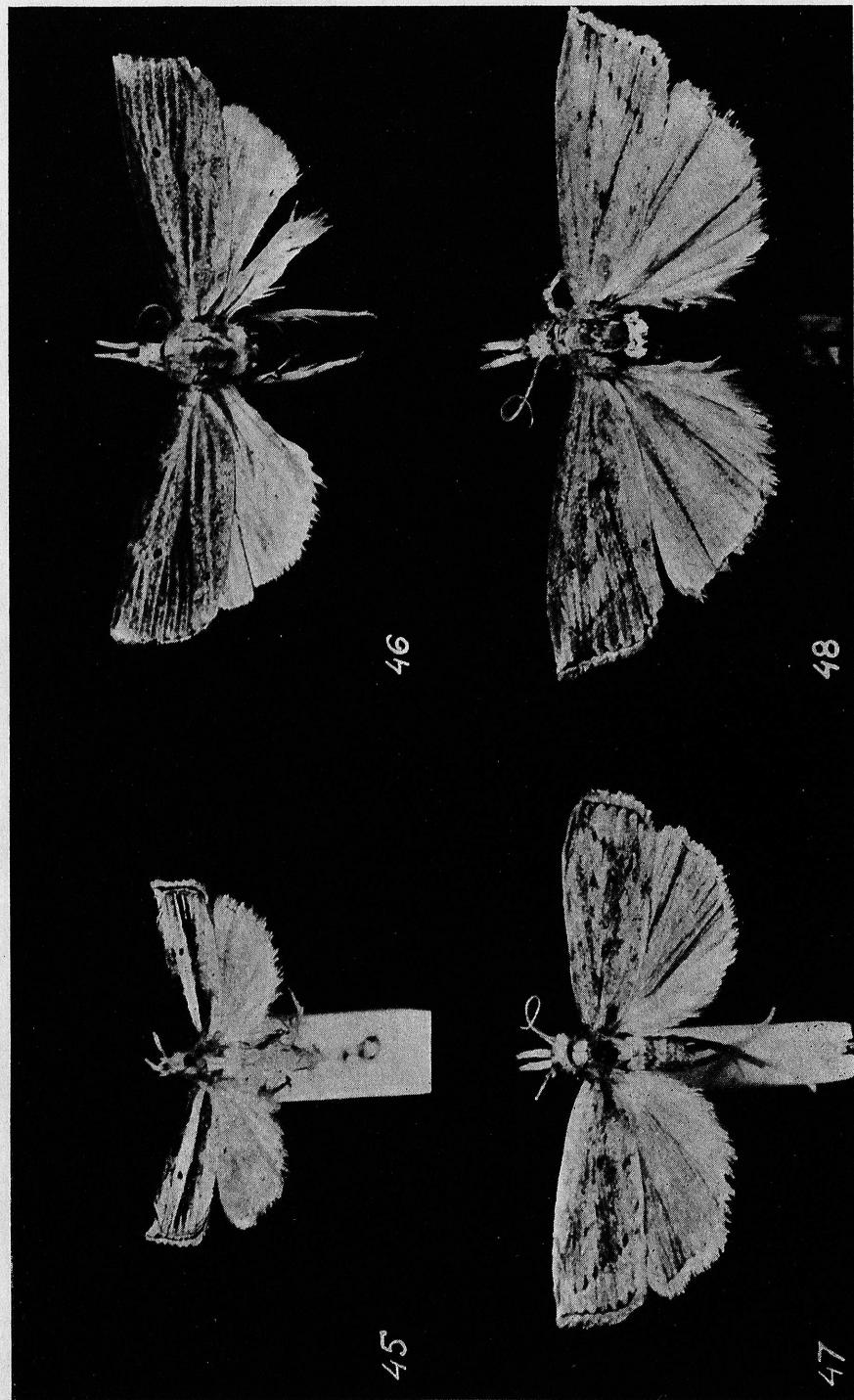
Plate XXXI

Fig. 45. *Calamotropha neurigrammalis* (HMPS.). ♀. Ceylon.

Fig. 46. *Calamotropha albistrigella* (HMPS.). ♂. Bonin Islands. Holotype.

Fig. 47. *Calamotropha tonsalis* (WALK.). ♂. Singapoore. Holotype of *Crambus albidorsatus* HMPS.

Fig. 48. *Calamotropha tonsalis* (WALK.). ♀. Borneo. Holotype.



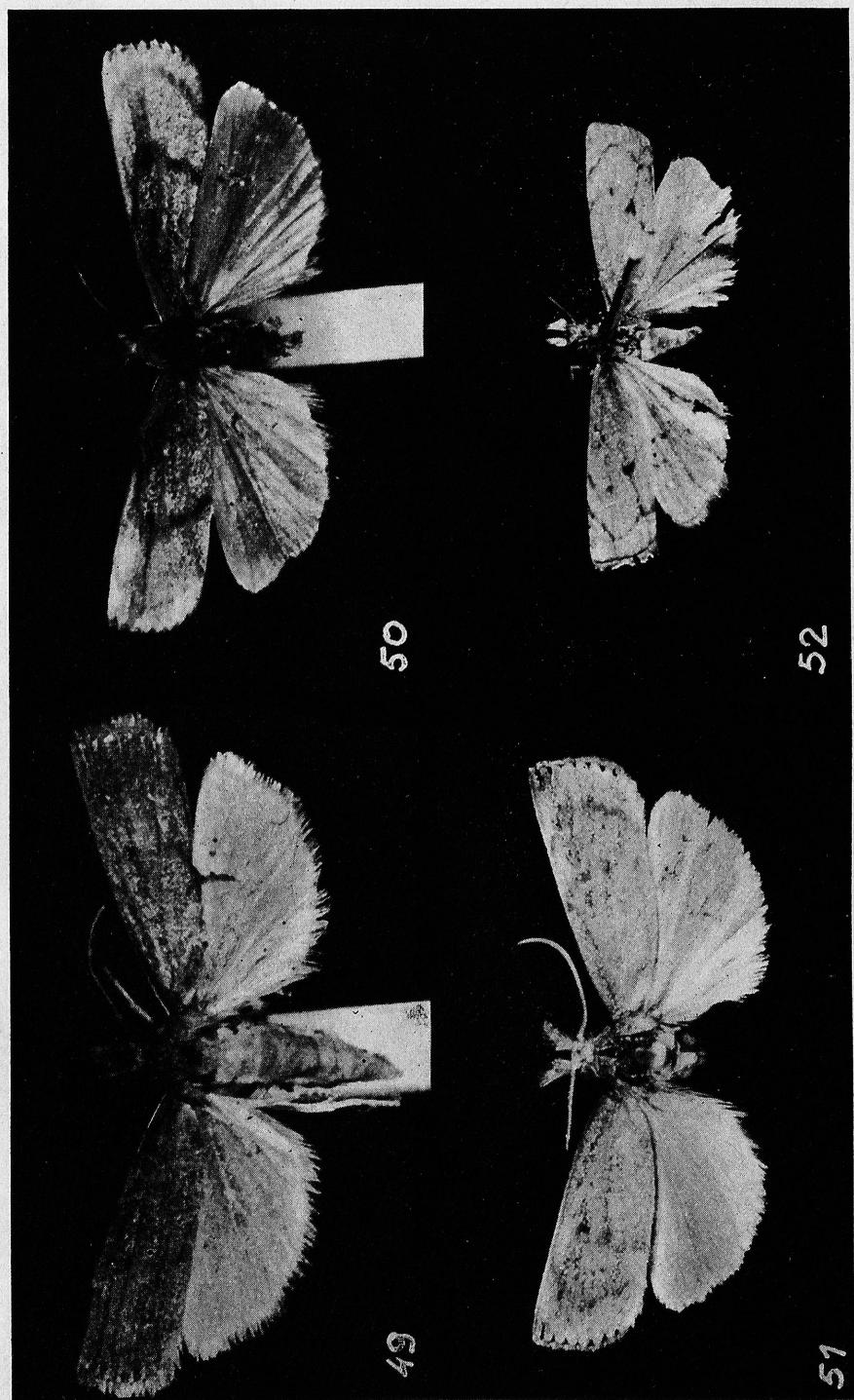
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Acta Zoologica nr 7

Plate XXXII

Fig. 49. *Calamotropha atkinsoni* ZELL. ♀. Ceylon.  
Fig. 50. *Calamotropha atkinsoni malaica* ssp. n. ♂. Singapoore. Holotype.  
Fig. 51. *Calamotropha lupata* (MEYR.). ♂. Punjab. Lectotype.  
Fig. 52. *Calamotropha famulella* (WALK.). ♂. Ceylon.



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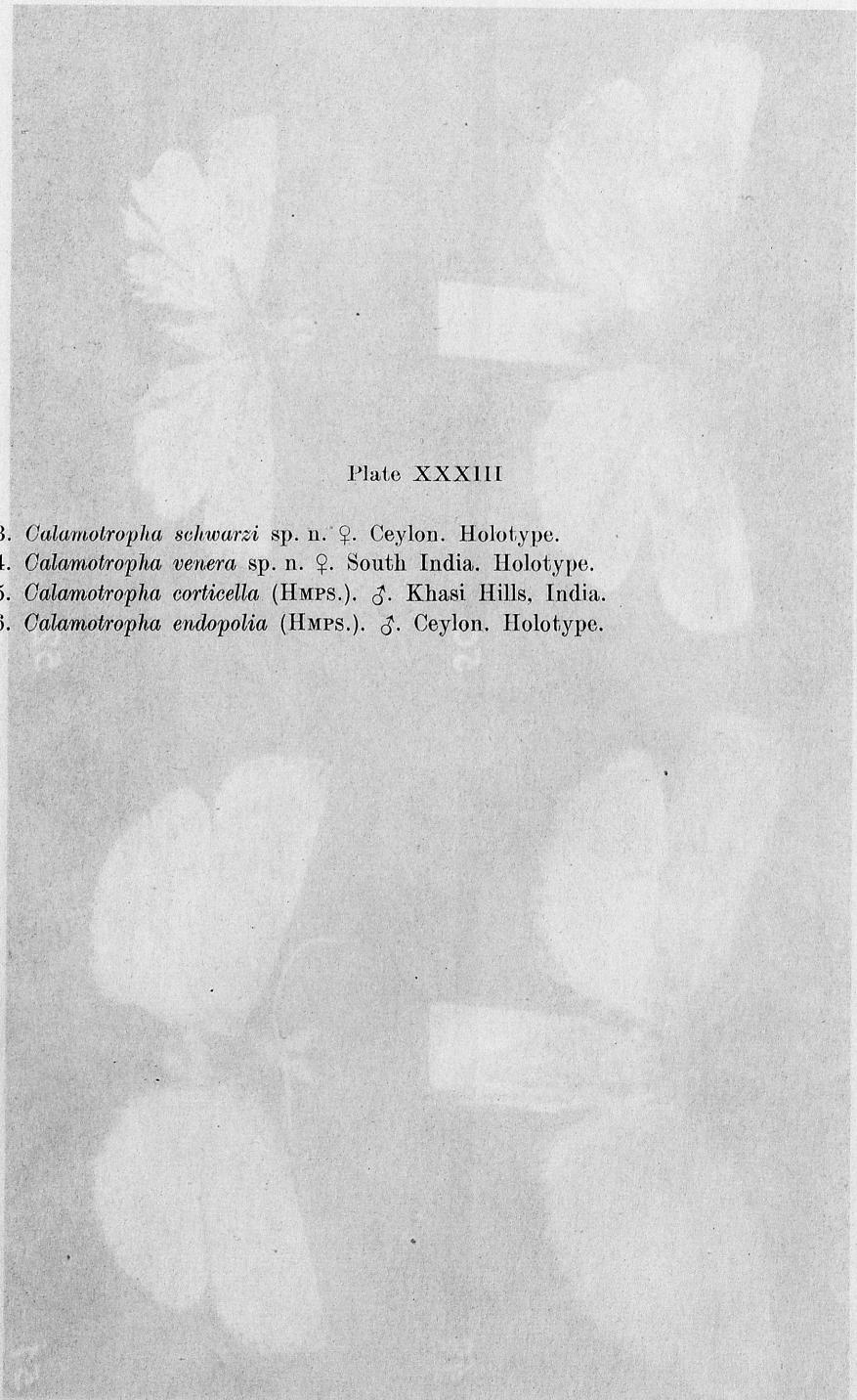
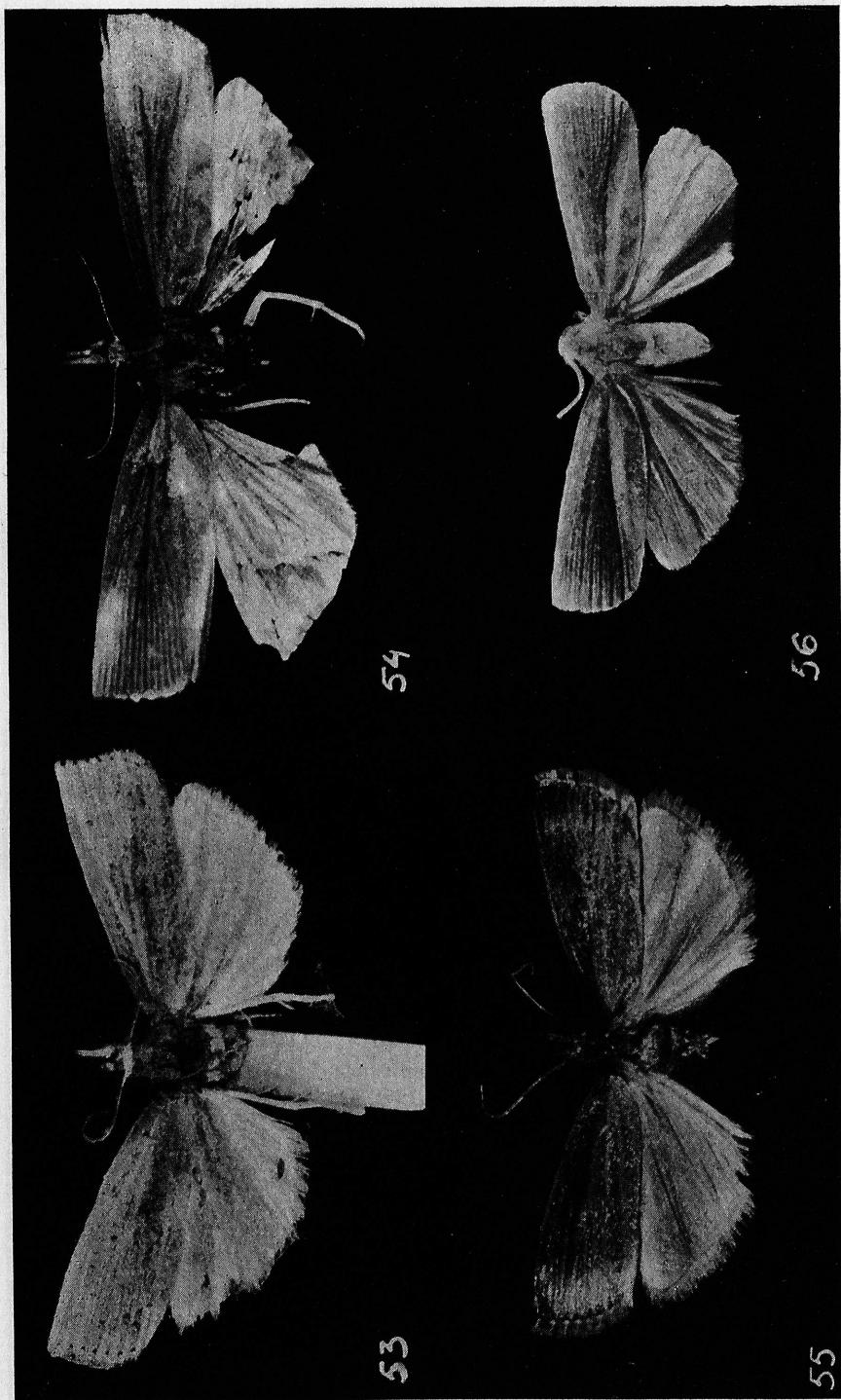


Plate XXXIII

Fig. 53. *Calamotropha schwarzi* sp. n. ♀. Ceylon. Holotype.  
 Fig. 54. *Calamotropha venera* sp. n. ♀. South India. Holotype.  
 Fig. 55. *Calamotropha corticella* (HMPS.). ♂. Khasi Hills, India.  
 Fig. 56. *Calamotropha endopolia* (HMPS.). ♂. Ceylon. Holotype.



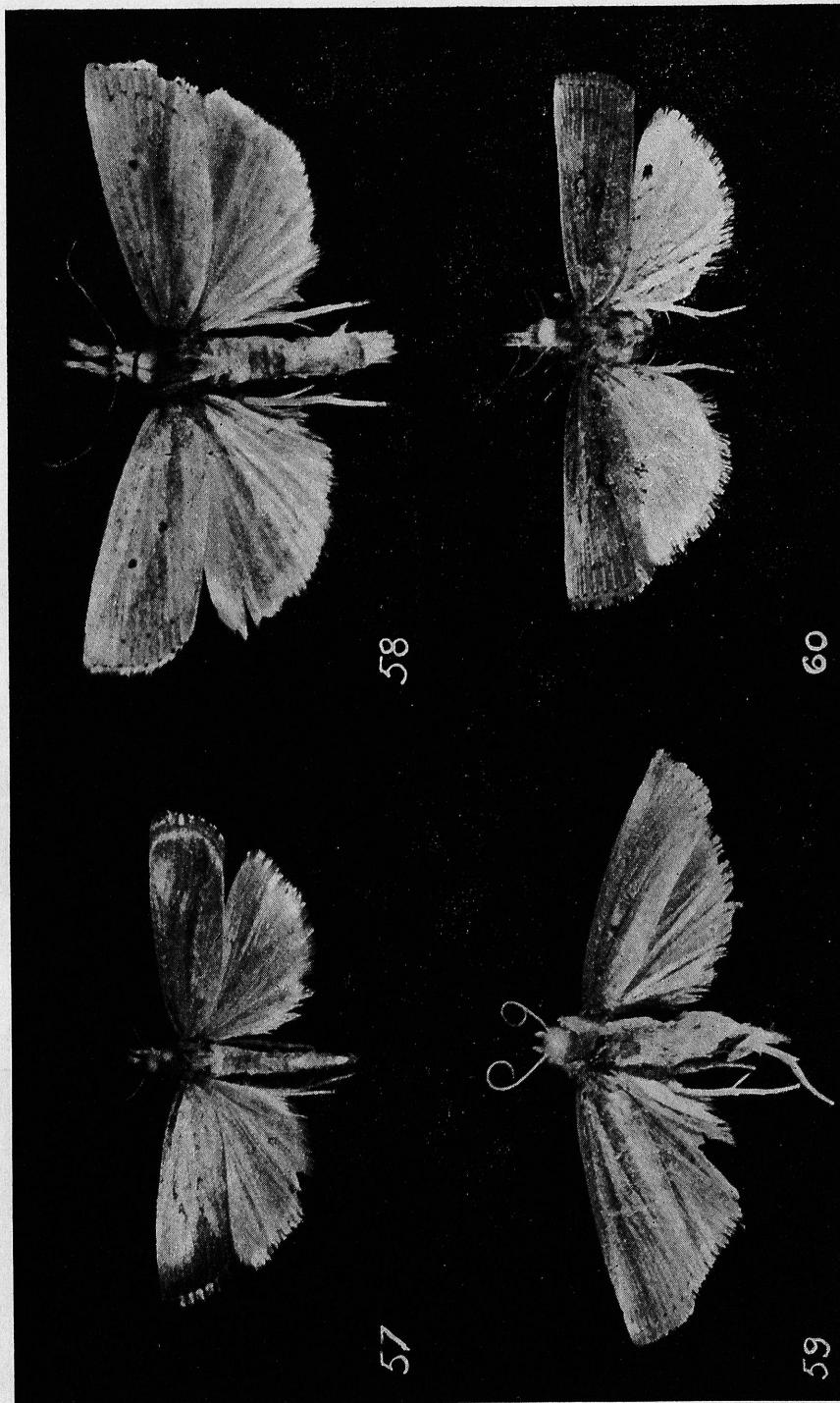
## Plate XXXIV

Fig. 57. *Calamotropha subfamulella* (CAR. & MEYR.). ♂. Shanghai, China.

Fig. 58. *Calamotropha dielota* MEYR. ♂. Australia.

Fig. 59. *Calamotropha unicorella* (ZELL.). ♀. Darjeeling, India. Holotype.

Fig. 60. *Calamotropha unicorella* (ZELL.). ♀. Ceylon.

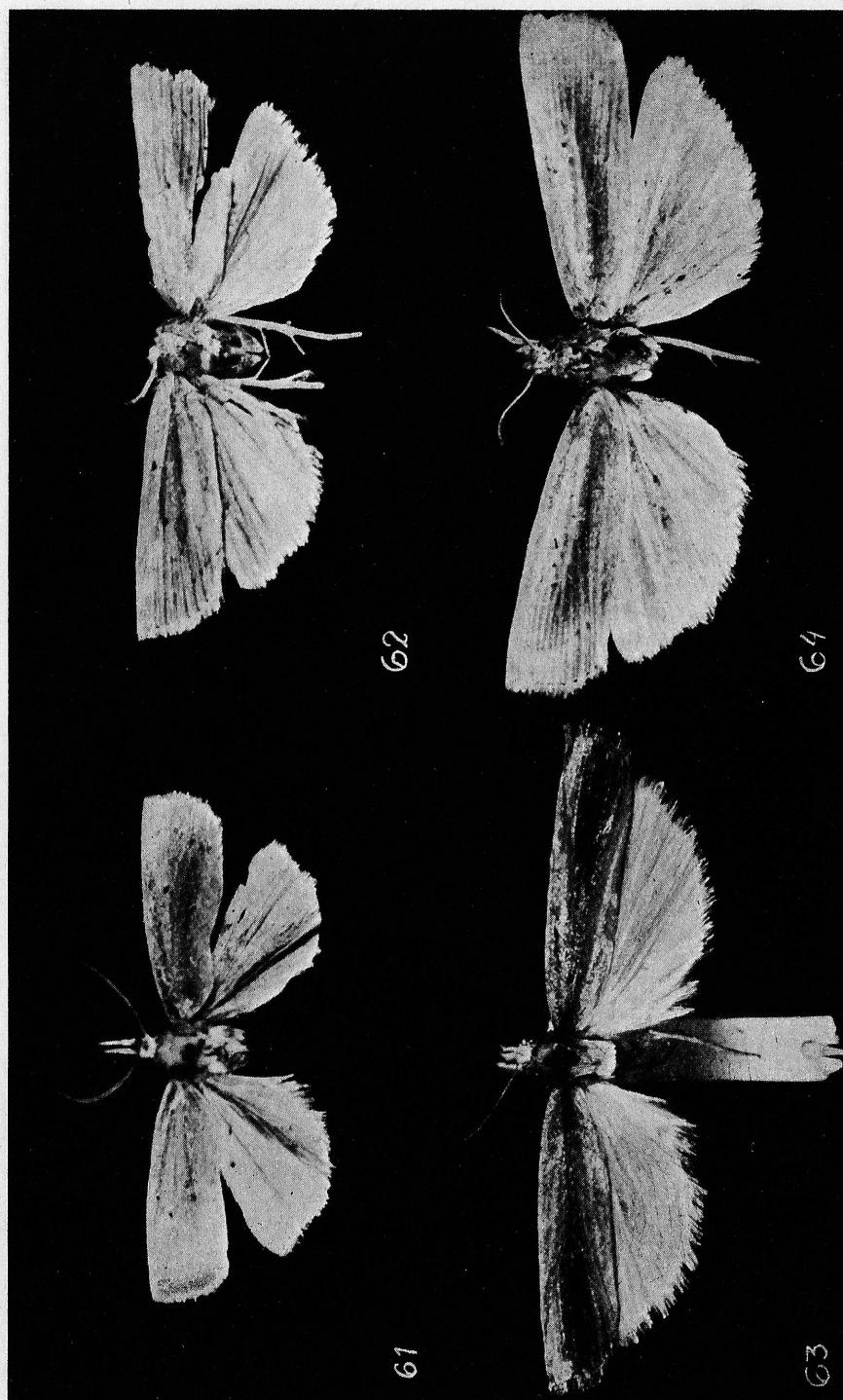


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Plate XXXV

Fig. 61. *Calamotropha javaica* sp. n. ♀. Java. Holotype.  
Fig. 62. *Calamotropha anticella* (WALK.). ♀. Natal. Holotype.  
Fig. 63. *Calamotropha fuscivittalis* (HMPS.). ♀. Rhodesia, Holotype.  
Fig. 64. *Calamotropha janusella* sp. n. ♀. Abyssinia. Holotype.

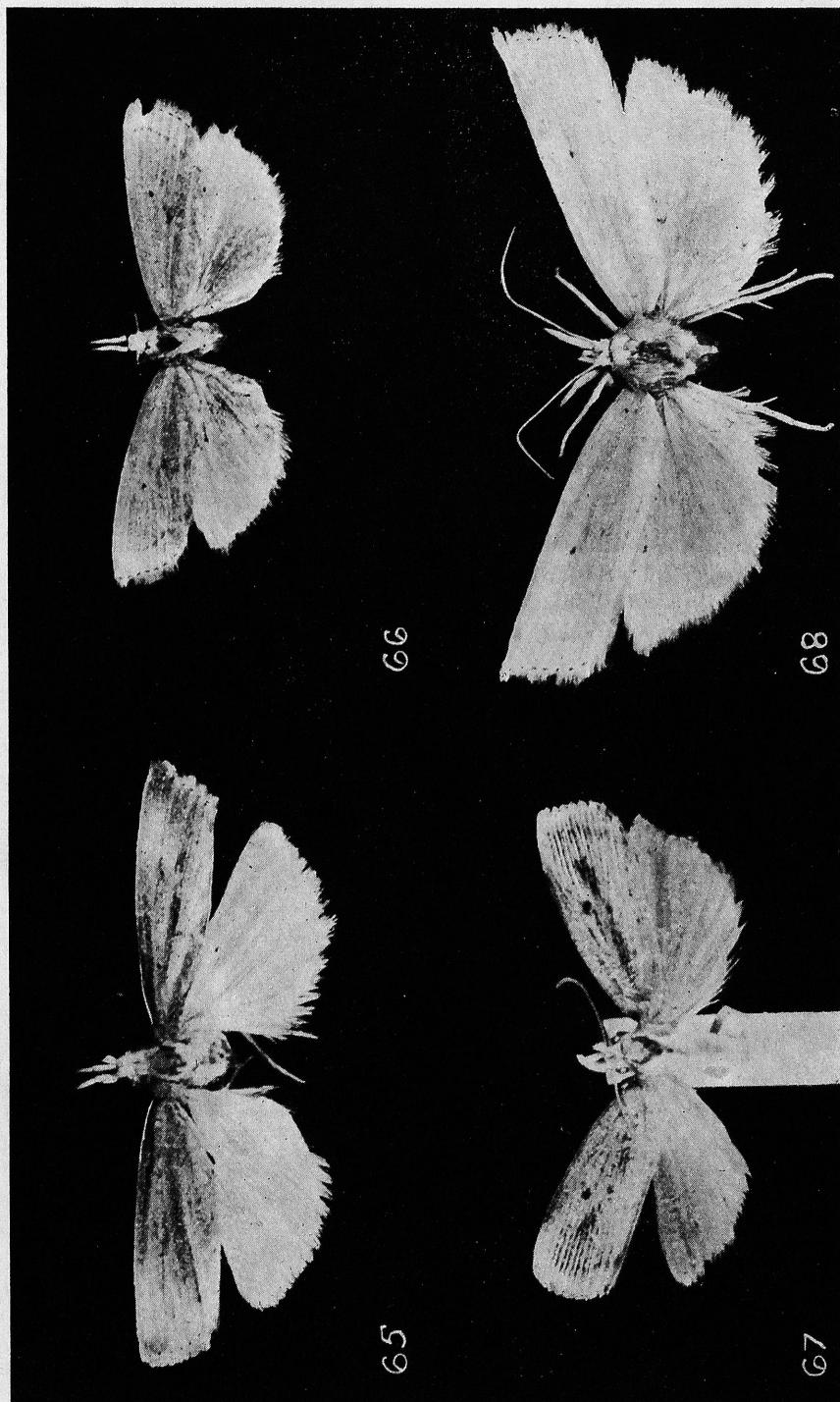


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Plate XXXVI

Fig. 65. *Calamotropha torpidella* (ZELL.). ♀. Africa. Holotype.  
Fig. 66. *Calamotropha lattini* sp. n. ♀. Nyasaland. Holotype.  
Fig. 67. *Calamotropha fuscilineatella* (LUCAS). ♂. Morocco. Holotype.  
Fig. 68. *Calamotropha diakonoffi* sp. n. ♀. Natal. Holotype.



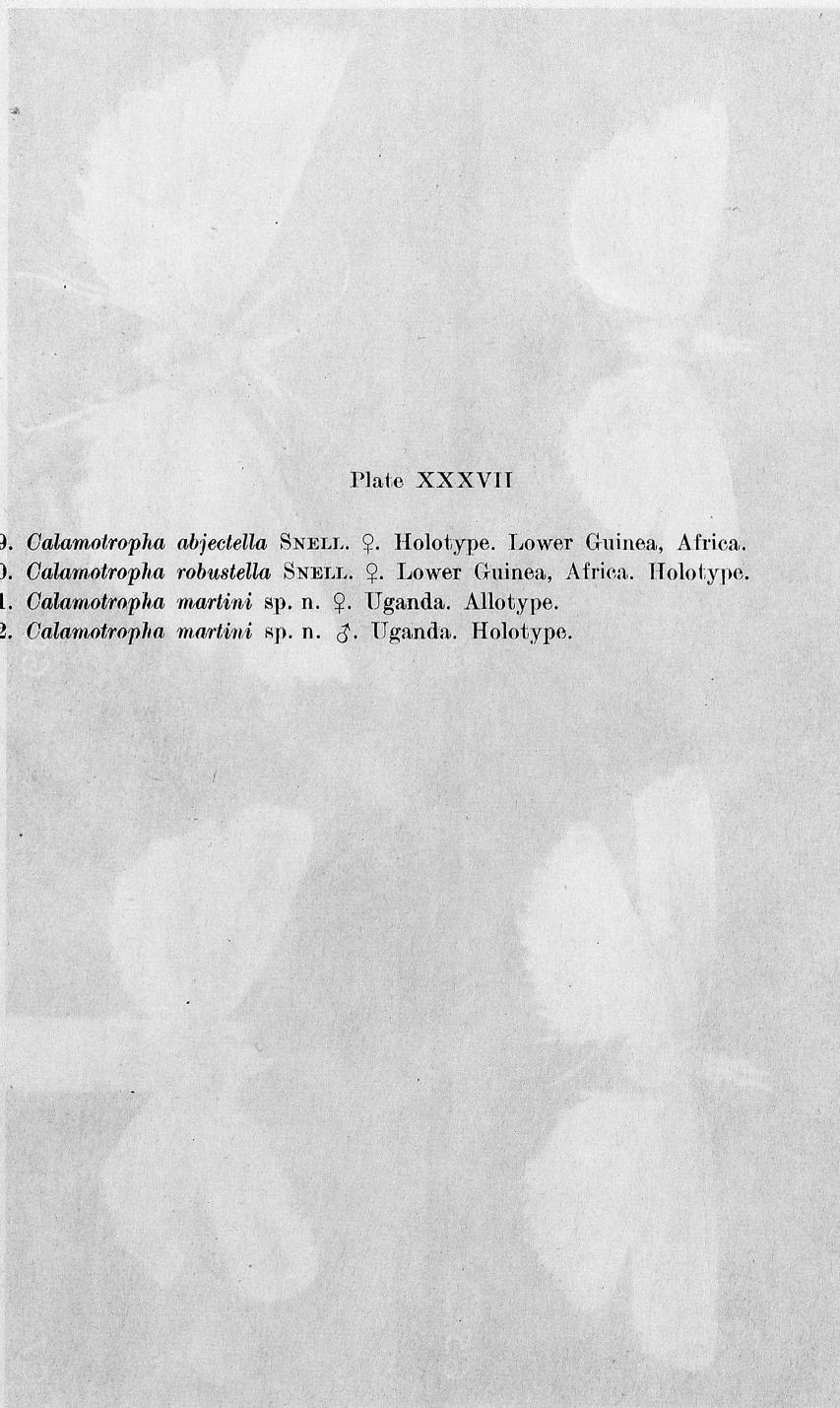


Plate XXXVII

Fig. 69. *Calamotropha abjectella* SNELL. ♀. Holotype. Lower Guinea, Africa.  
Fig. 70. *Calamotropha robustella* SNELL. ♀. Lower Guinea, Africa. Holotype.  
Fig. 71. *Calamotropha martini* sp. n. ♀. Uganda. Allotype.  
Fig. 72. *Calamotropha martini* sp. n. ♂. Uganda. Holotype.

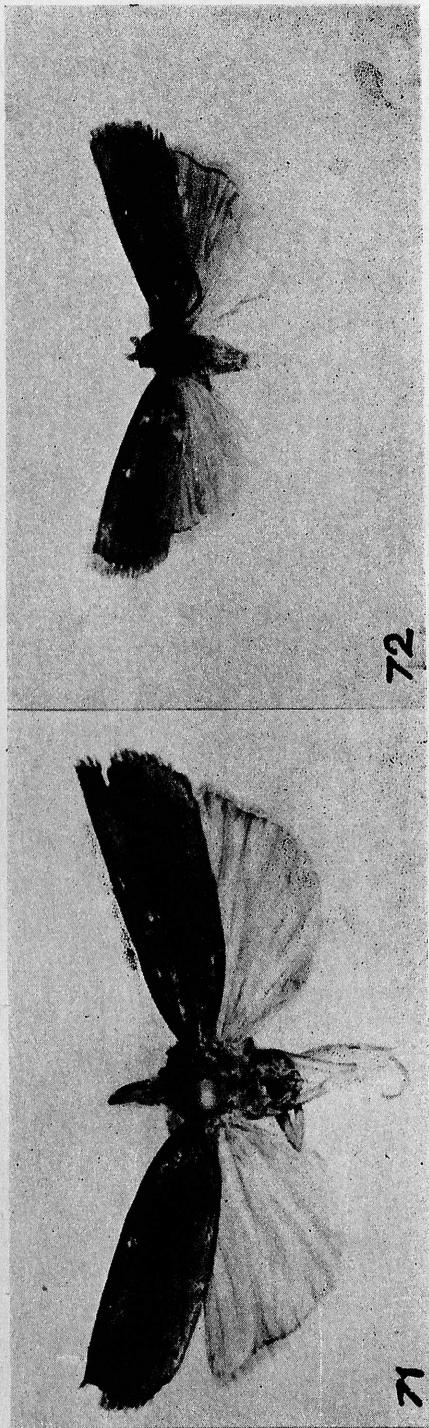
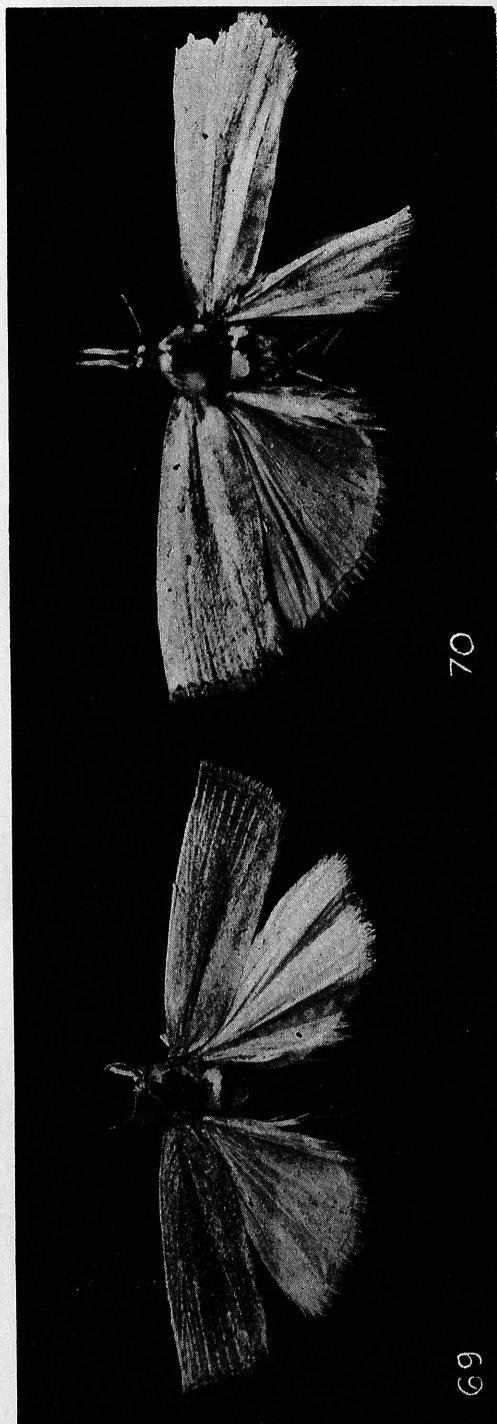


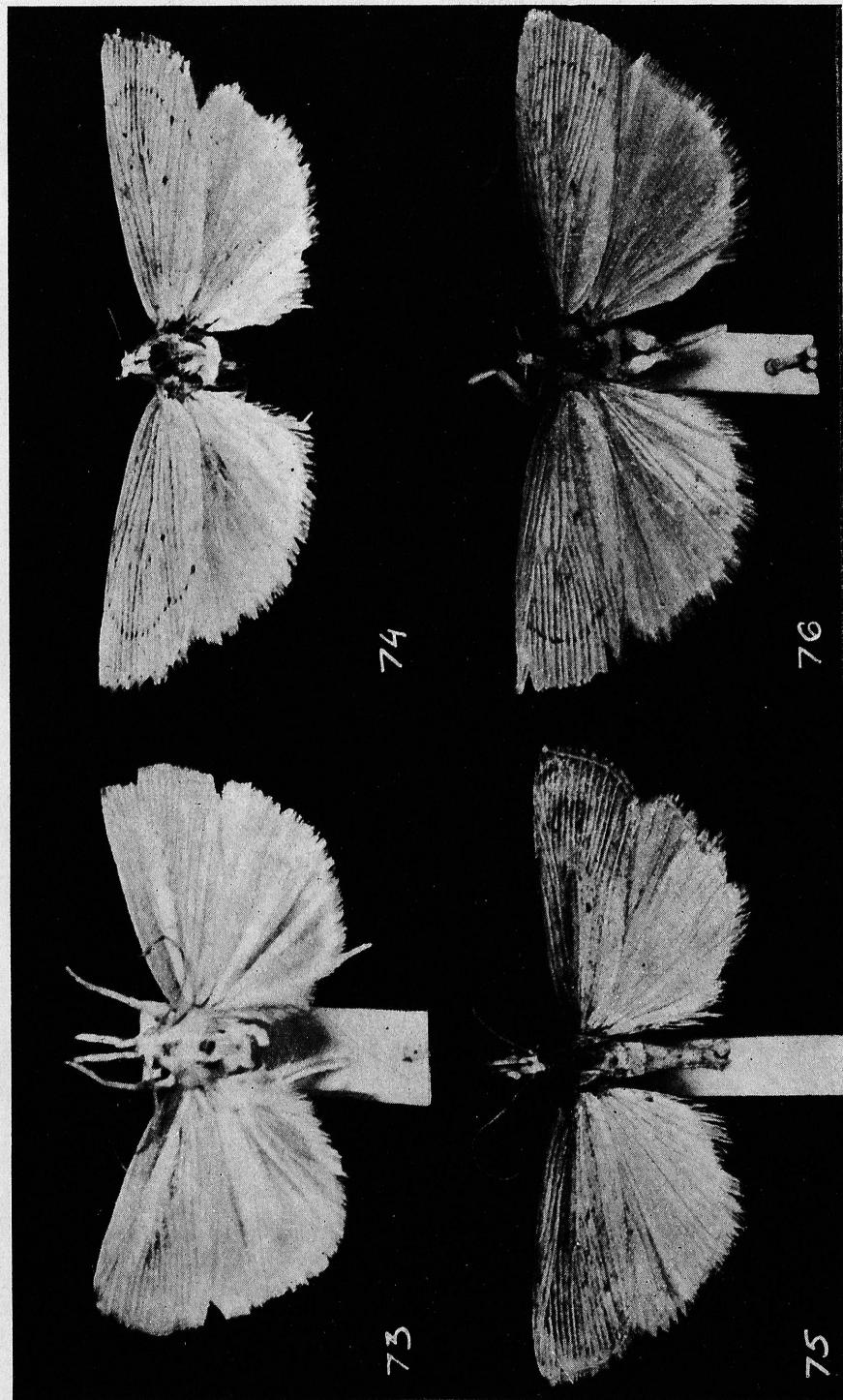
Plate XXXVIII

Fig. 73. *Calamotropha hierichuntica* ZELL. ♂. Palestine. Holotype.

Fig. 74. *Calamotropha stachi* sp. n. ♀. Umkomaas, Africa. Holotype.

Fig. 75. *Calamotropha bradleyi* BLESZ. ♂. Cape Colony, Africa. Holotype.

Fig. 76. *Calamotropha bradleyi*. BLESZ. ♀. Natal.

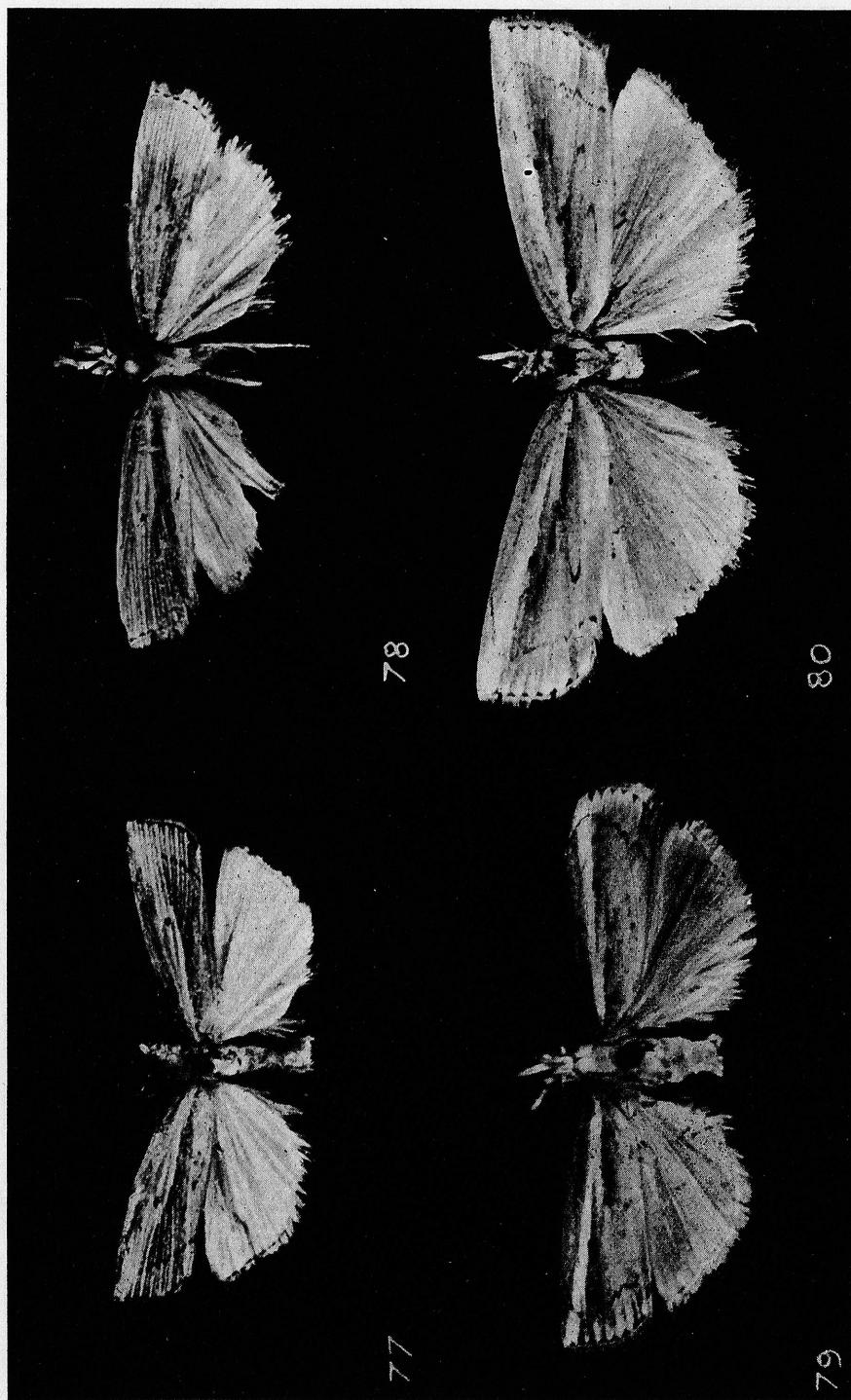


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Plate XXXIX

Fig. 77. *Calamotropha mimosa* sp. n. ♂. Upper Uelle, Africa. Holotype.  
Fig. 78. *Calamotropha danutae* sp. n. ♀. Nyasaland. Holotype.  
Fig. 79. *Calamotropha athena* sp. n. ♂. Old Calabar, Africa. Holotype.  
Fig. 80. *Calamotropha athena* sp. n. ♀. Masindi, Africa. Typoid.



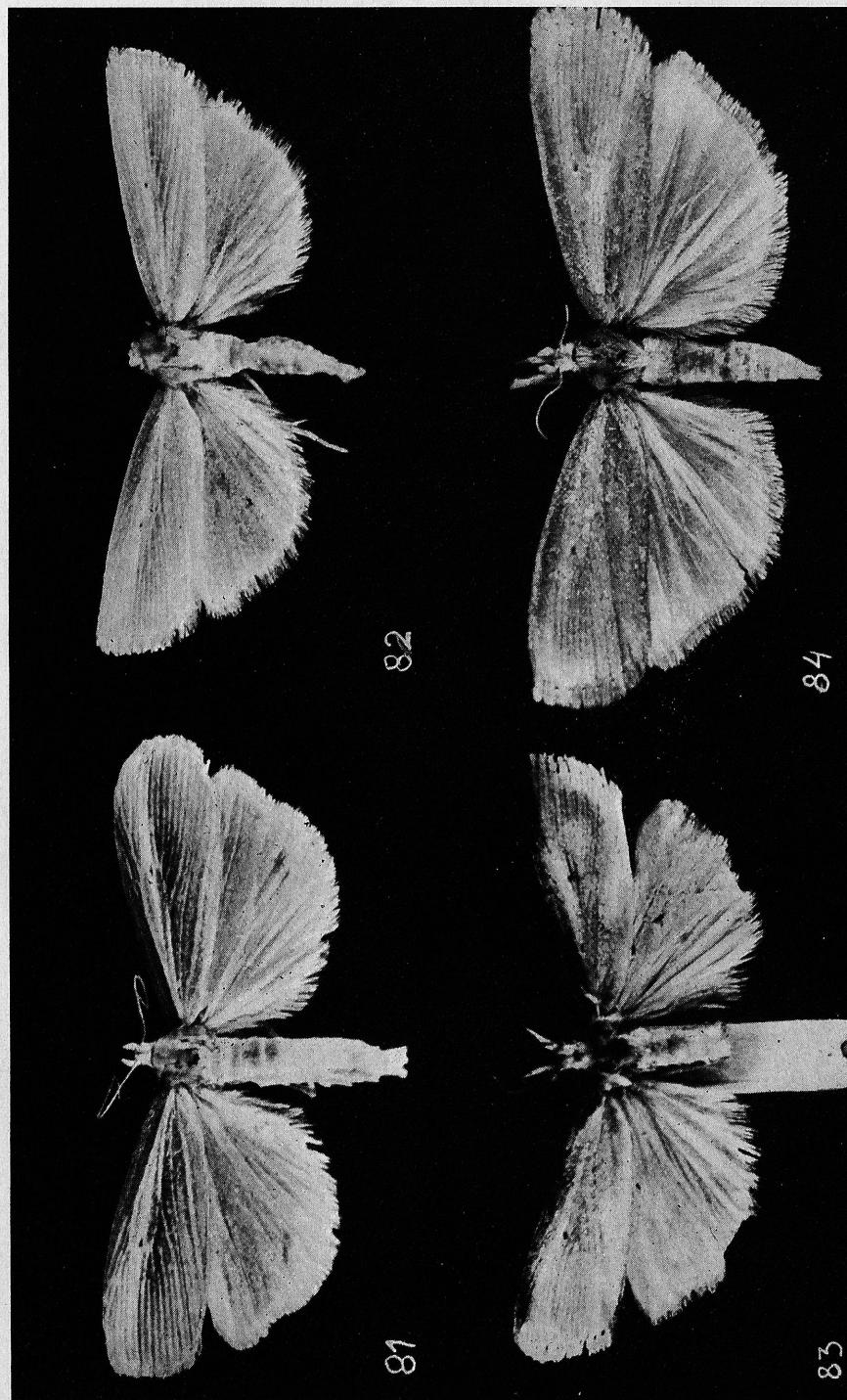
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Acta Zoologica nr 7

Plate XL

Fig. 81. *Calamotropha hierichuntica* ZELL. ♂. Marasch, Syria.  
Fig. 82. *Calamotropha hierichuntica* ZELL. ♀. Marasch, Syria.  
Fig. 83. *Calamotropha heliocausta* (WALL.). ♂. Natal.  
Fig. 84. *Calamotropha joskeella* sp. n. ♀. Tanganyika-Territory. Allotype.

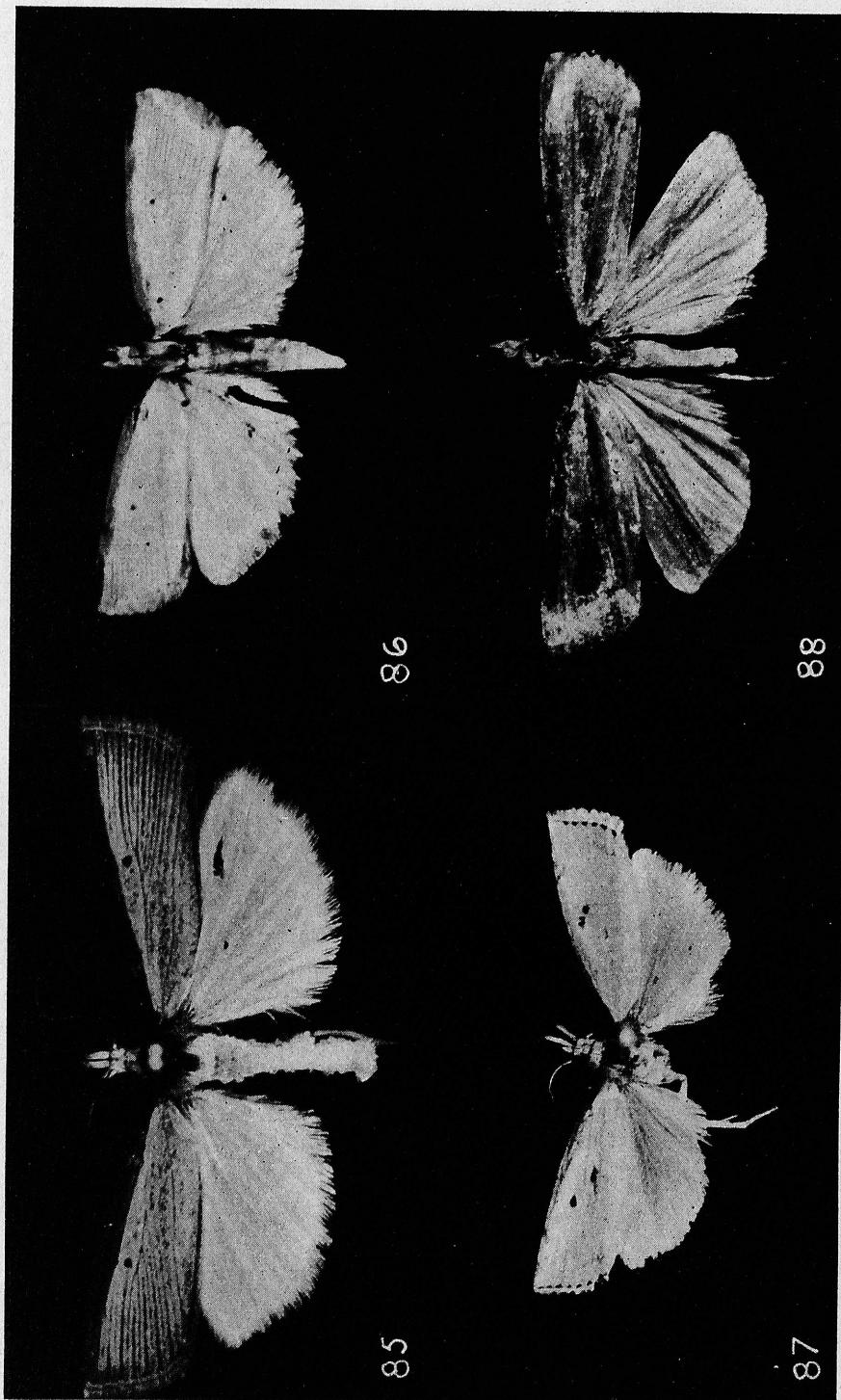


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12\*

Plate XLI

Fig. 85. *Calamotropha wallengreni* sp. n. ♂. Zululand. Holotype.  
Fig. 86. *Calamotropha psaltrias* (MEYR.). ♀. Katanga, Congo. Holotype.  
Fig. 87. *Calamotropha agrayppina* sp. n. ♀. Nyasaland. Holotype.  
Fig. 88. *Calamotropha bicornutella* sp. n. ♂. Angola. Holotype.

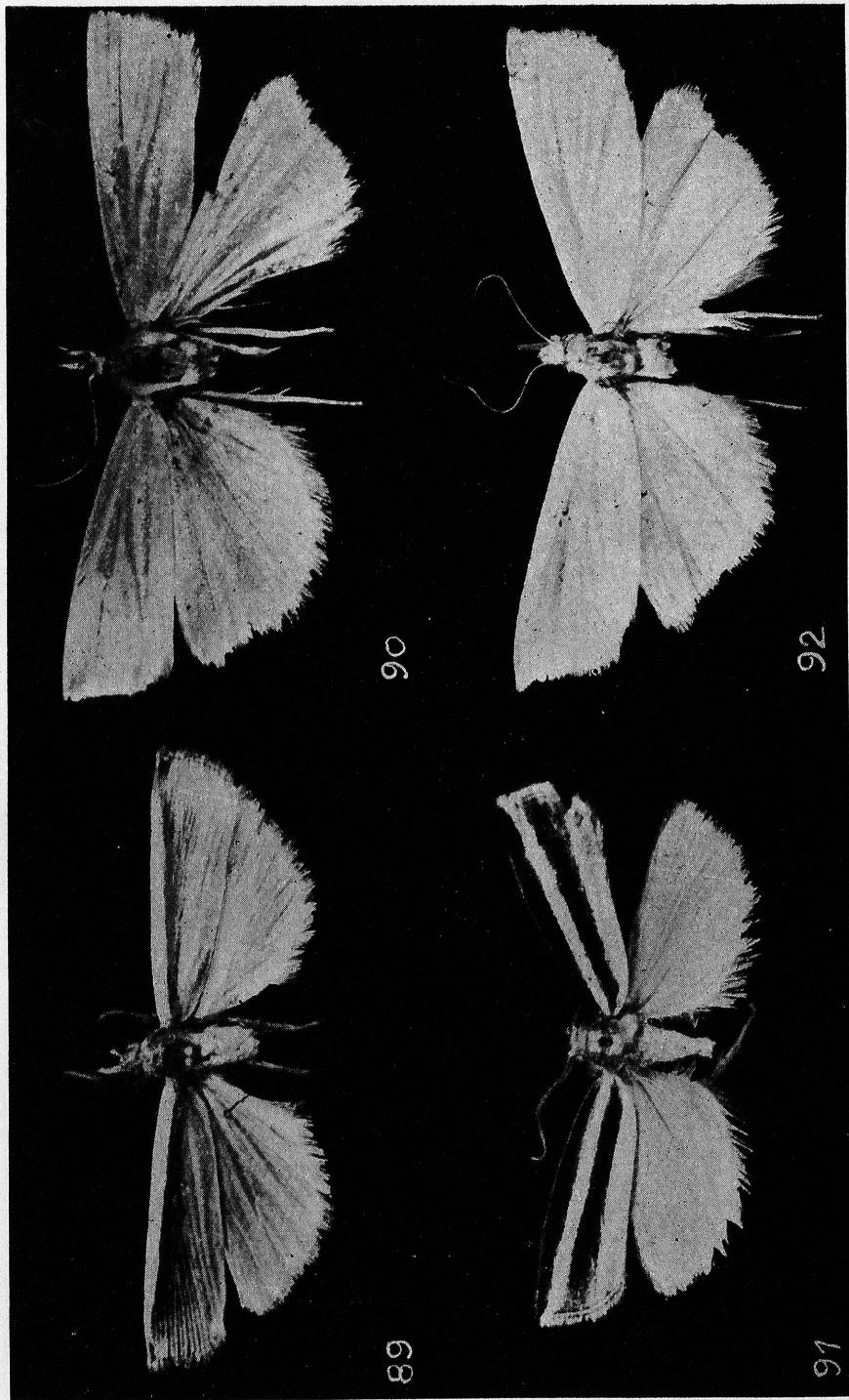


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Plate XLII

Fig. 89. *Calamotropha niveicostella* (HMPS.). ♀. British East Africa. Holotype.  
Fig. 90. *Calamotropha xanthypa* sp. n. ♀. Natal. Holotype.  
Fig. 91. *Calamotropha tripartita* (HMPS.). ♂. Natal. Holotype.  
Fig. 92. *Calamotropha argyrostola* (HMPS.). ♂. Natal. Holotype.

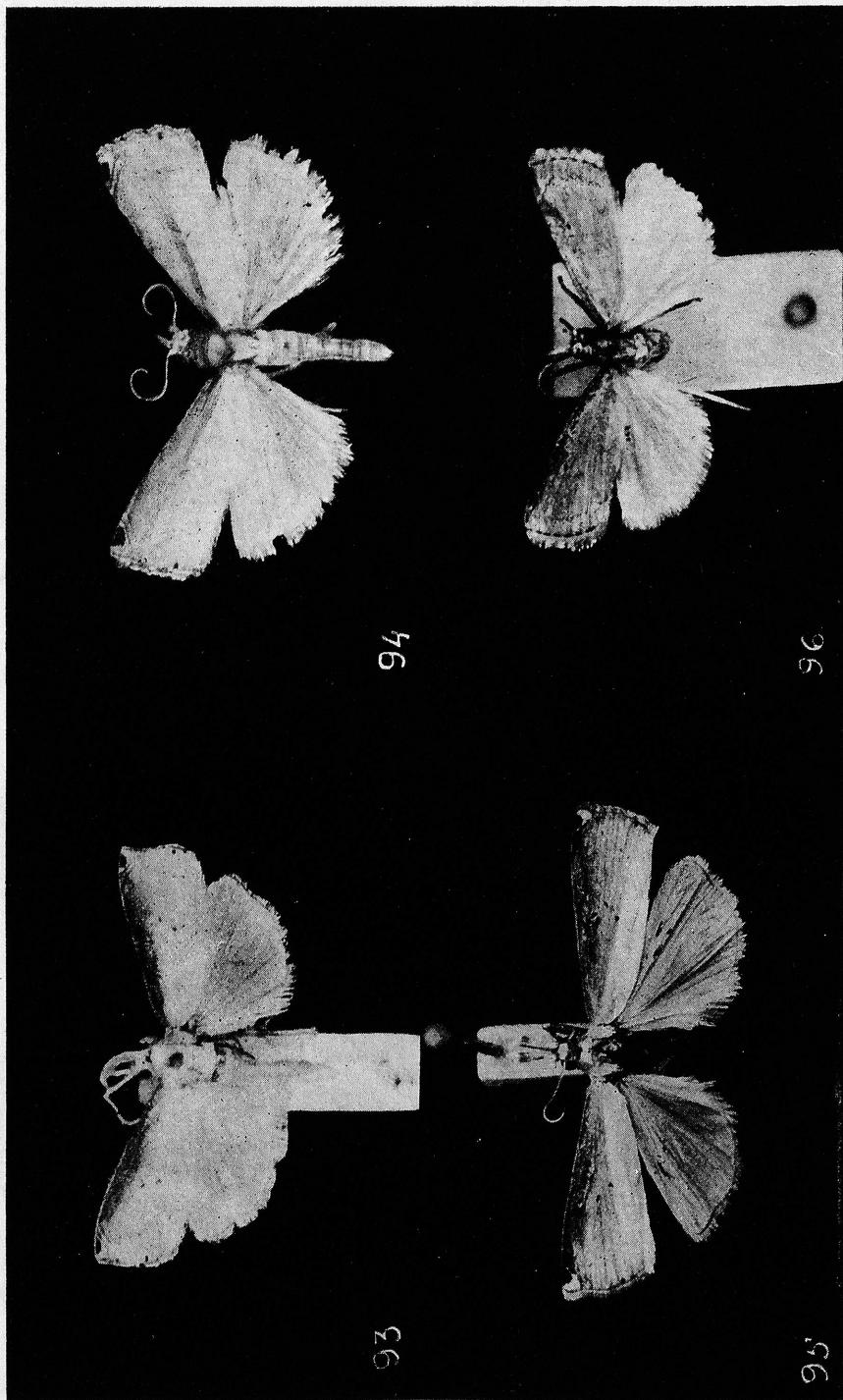


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Plate XLIII

Fig. 93. *Calamotropha indica* sp. n. ♂. Ceylon. Typoid.  
Fig. 94. *Calamotropha melli* (CAR. & MEYR.). ♂. China. Typoid.  
Fig. 95. *Calamotropha oculalis* (SNELL.). ♀. Java. Holotype.  
Fig. 96. *Calamotropha cleopatra* sp. n. ♂. East Africa. Holotype.



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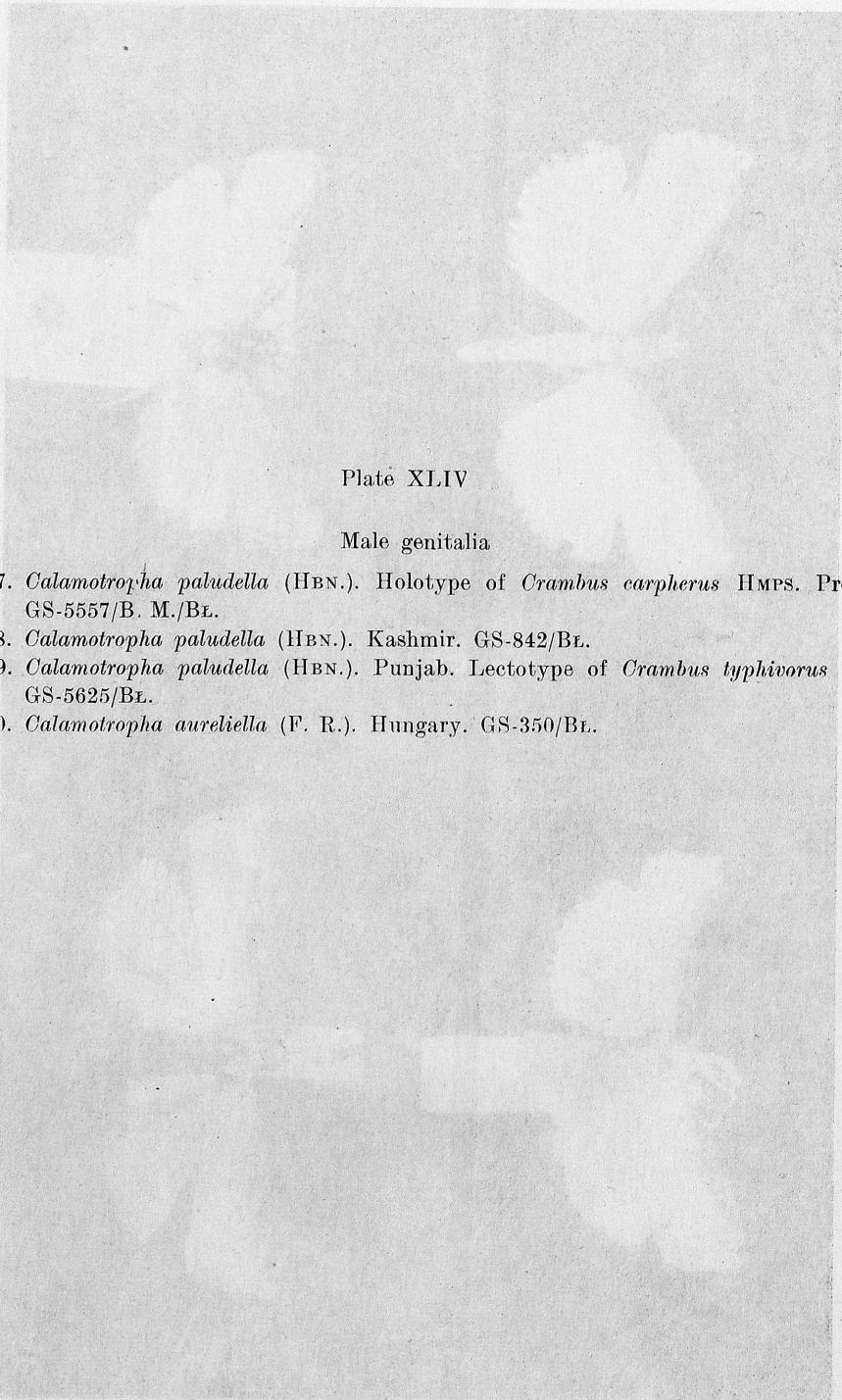


Plate XLIV

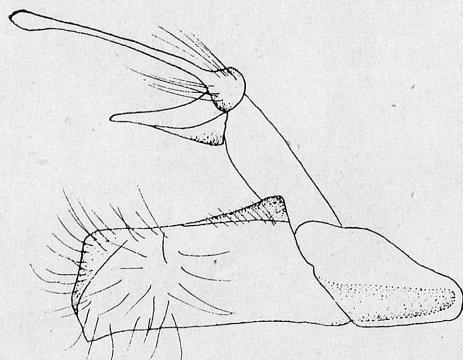
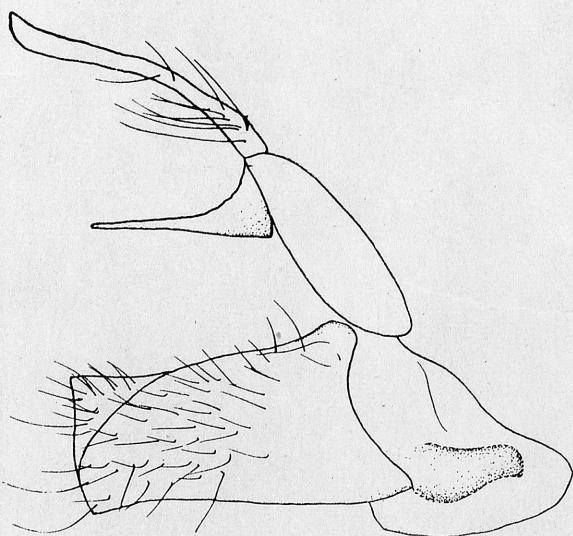
Male genitalia

Fig. 97. *Calamotropha paludella* (HBN.). Holotype of *Crambus carpherus* Hmps. Pretoria.  
GS-5557/B. M./BL.

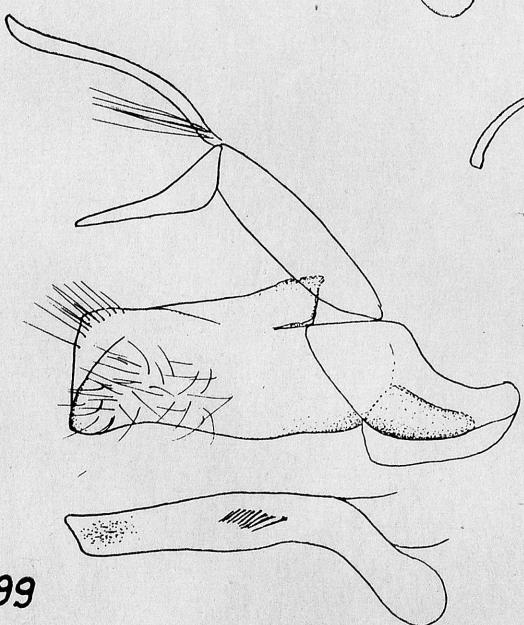
Fig. 98. *Calamotropha paludella* (HBN.). Kashmir. GS-842/BL.

Fig. 99. *Calamotropha paludella* (HBN.). Punjab. Lectotype of *Crambus typhivorus* MEYR.  
GS-5625/BL.

Fig. 100. *Calamotropha aureliella* (F. R.). Hungary. GS-350/BL.



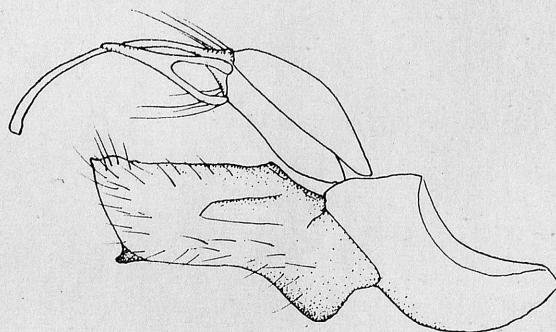
97



99



98



100

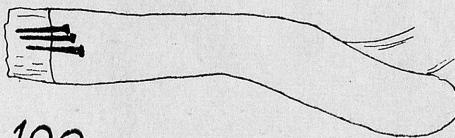


Plate XLV

Male genitalia

Fig. 101. *Calamotropha purella* (LEECH). Lectotype. Hakodate, Japan. GS-5605/B. M./BL.  
Fig. 102. *Calamotropha purella* (LEECH). Tainan, Formosa. Holotype of *Crambus flaviguttellus* WIL. & SOUTH. GS-5614/B. M./BL.  
Fig. 103. *Calamotropha purella* ssp. *aurifusalis* (CAR.). Hsiaoling, Manchuria. GS-959/TOLL.  
Fig. 104. *Calamotropha purella* (LEECH). Hsiaoling, Manchuria. GS-958/TOLL.

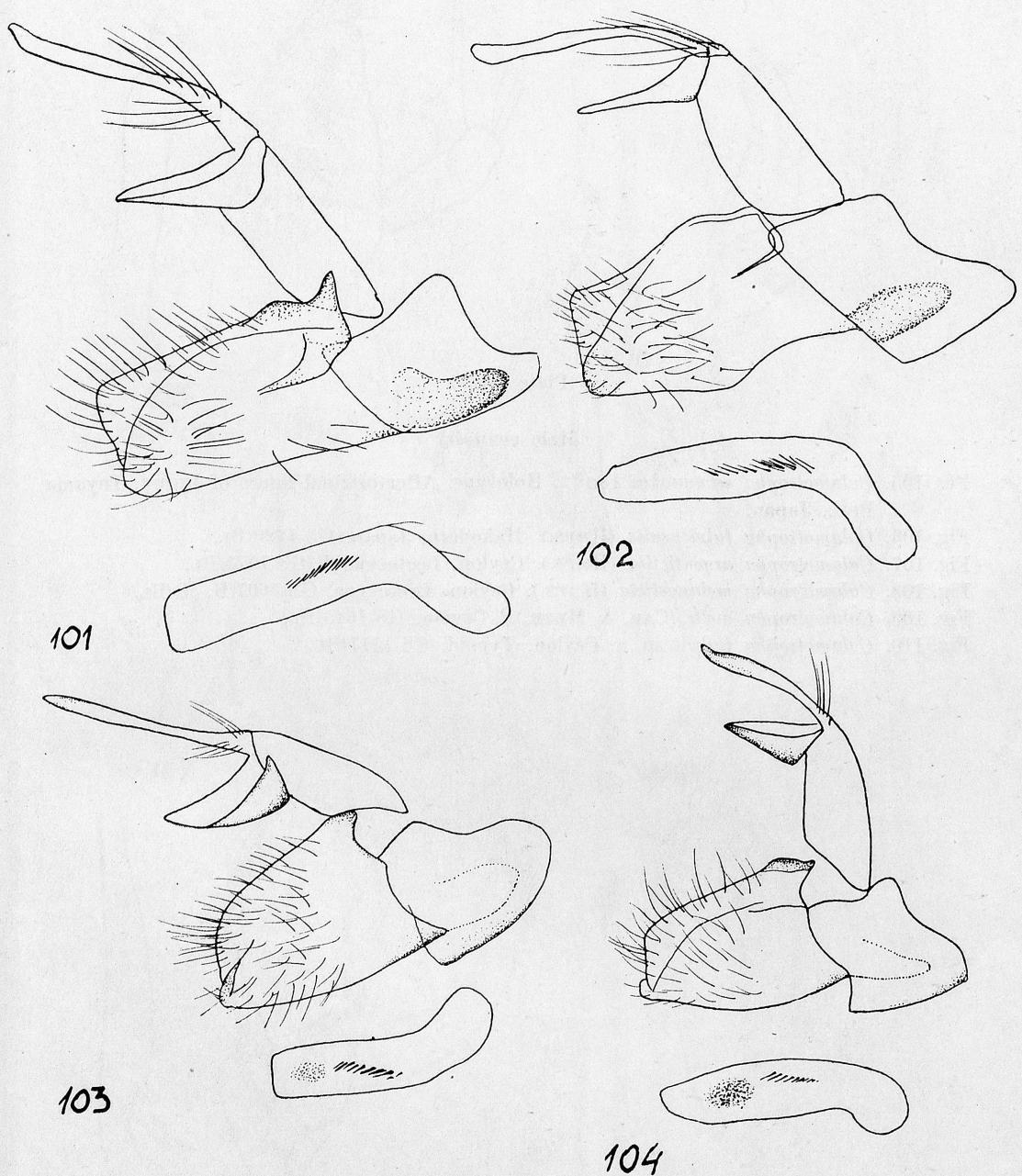


Plate XLVI

Male genitalia

Fig. 105. *Calamotropha yamanakai* INOUE. Holotype. After original figure of INOUE. Toyama Pref., Japan.

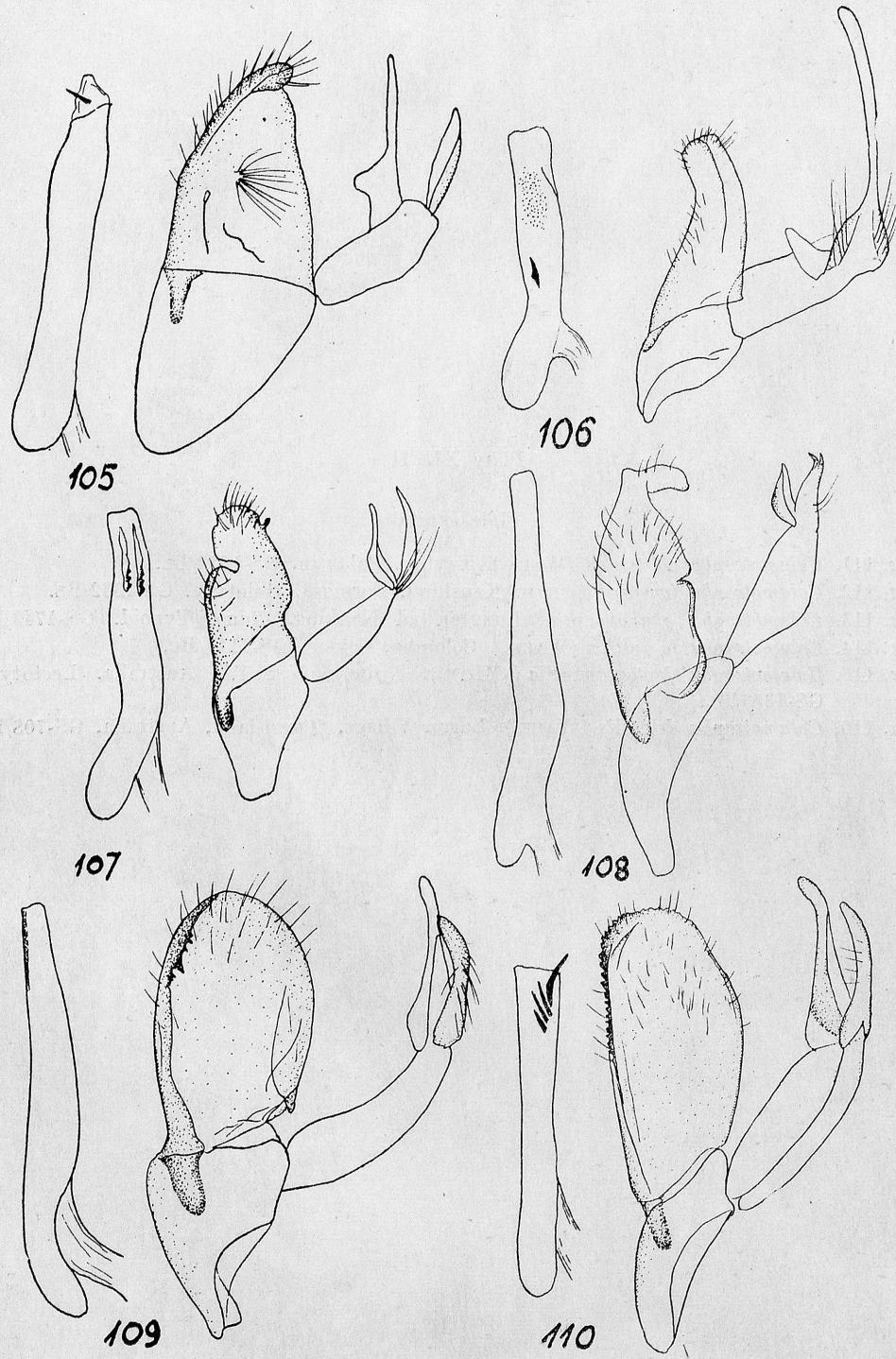
Fig. 106. *Calamotropha fulvifusalis* (HMPS.). Hakodate, Japan. GS-1220/BL.

Fig. 107. *Calamotropha argenticilia* (HMPS.). Ceylon. Lectotypoid. GS-1573/BL.

Fig. 108. *Calamotropha melanosticta* (HMPS.). Ceylon. Lectotype. GS-5607/B. M./BL.

Fig. 109. *Calamotropha melli* (CAR. & MEYR.).? Ceylon. GS-1645/BL.

Fig. 110. *Calamotropha indica* sp. n. Ceylon. Typoid. GS-1517/BL.

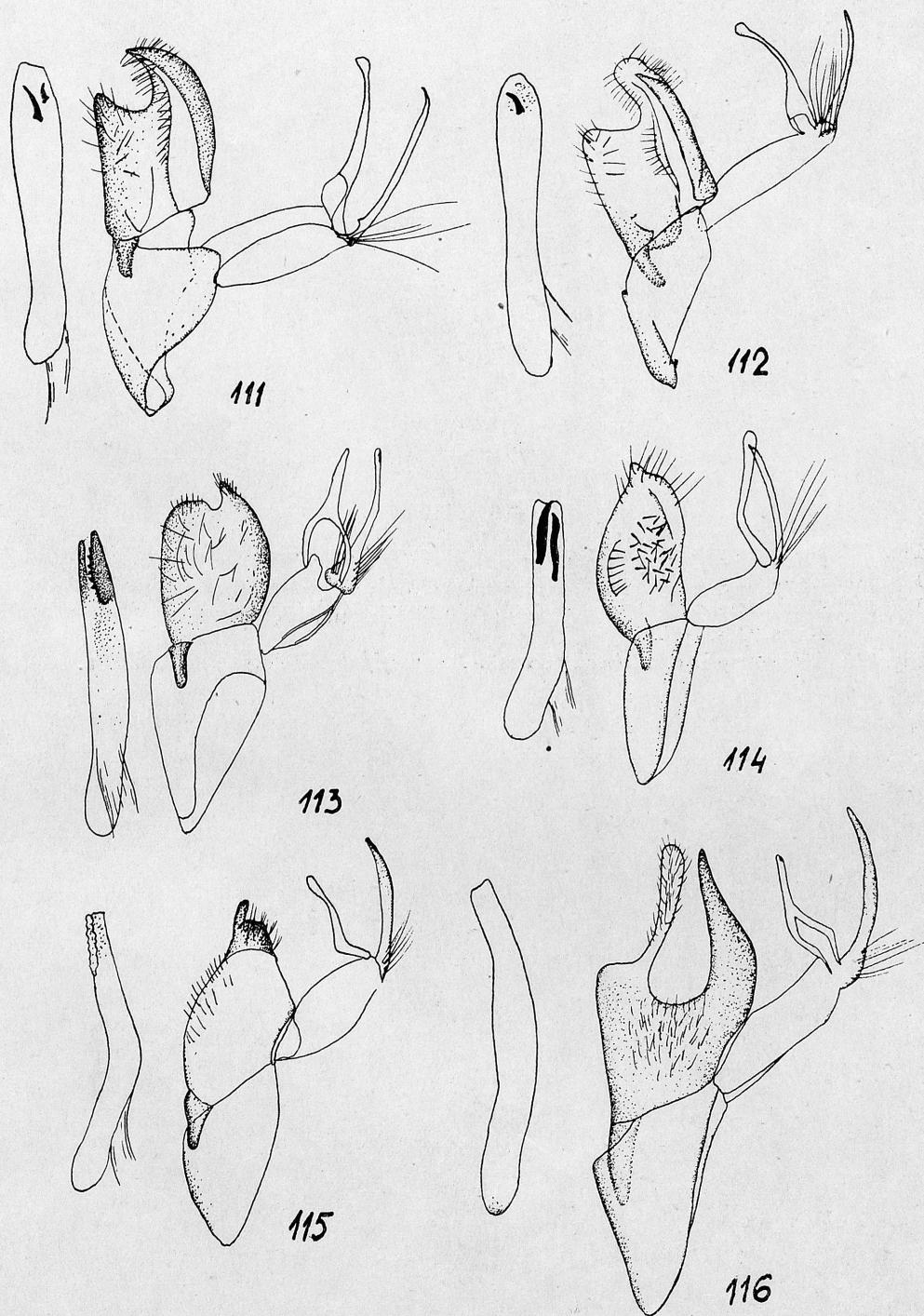


Auctor del.  
St. Bleszyński

Plate XLVII

Male genitalia

Fig. 111. *Calamotropha oblitterans* (WALK.). Taytay, Palawan. GS-1643/BL.  
Fig. 112. *Calamotropha formosella* sp. n. Kanshirei, Formosa. Holotype. GS-1332/BL.  
Fig. 113. *Calamotropha okanoi* sp. n. Lungtan ad Nanking, China. Typoid. GS-1743/BL.  
Fig. 114. *Calamotropha famulella* (WALK.). Colombo, Ceylon. GS-1213/BL.  
Fig. 115. *Calamotropha leptogrammella* (MEYR.). Sydney, N. S. W., Australia. Lectotype. GS-1355/BL.  
Fig. 116. *Calamotropha delatalis* (WALK.). Logan Village, Queensland, Australia. GS-708/BL.



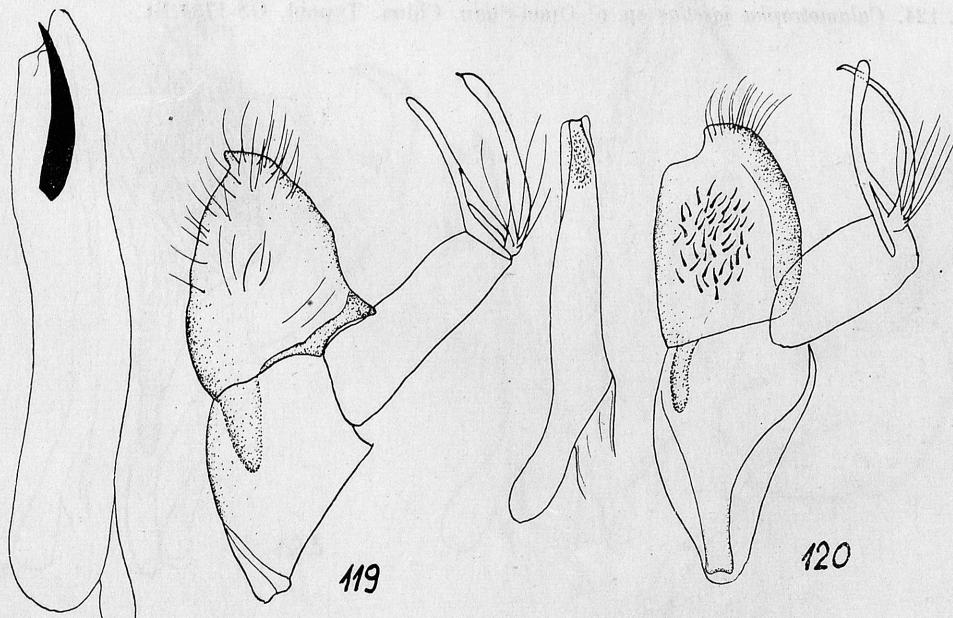
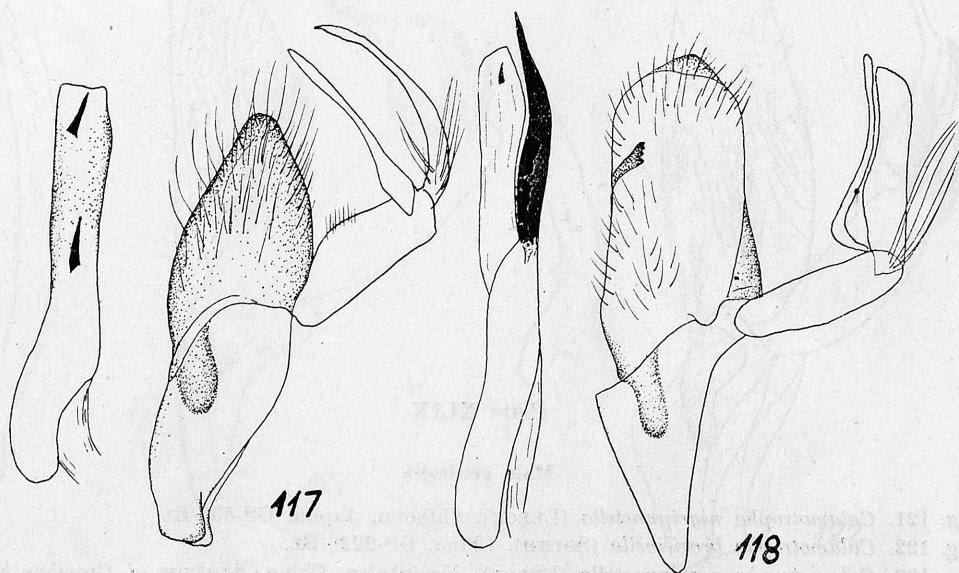
Auctor del.  
*St. Bleszyński*

Acta Zoologica nr 7

Plate XLVIII

Male genitalia

Fig. 117. *Calamotropha saturnella* sp. n. Travancoore, India. Holotype. GS-1214/B.L.  
Fig. 118. *Calamotropha corticella* (HMPS.). Khasi Hills, India. Lectotype. GS-5527/B.L.  
Fig. 119. *Calamotropha tonsalis* (WALK.). Singapore. Holotype of *Crambus albidorsatus*  
HMPS. GS-5547/B.L.  
Fig. 120. *Calamotropha albistrigella* (HMPS.). Bonin Islands. Holotype. GS-5522/B.L.



## Plate XLIX

## Male genitalia

Fig. 121. *Calamotropha nigripunctella* (LEECH). Shihoku, Japan. GS-538/BL.

Fig. 122. *Calamotropha brevilinella* (SOUTH). China. GS-2226/BL.

Fig. 123. *Calamotropha nigripunctella* (LEECH). Kwanhsien, China. Syntype of *Crambus brevistrigellus* CAR. GS-1744/BL.

Fig. 124. *Calamotropha josettae* sp. n. Omei-Shan, China. Typoid. GS-1794/BL.

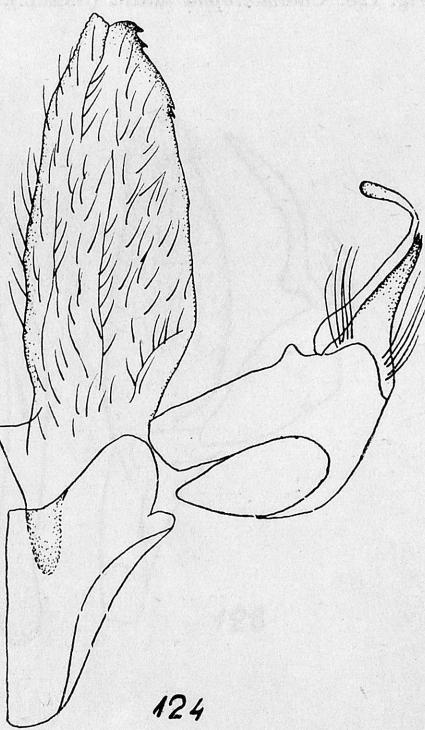
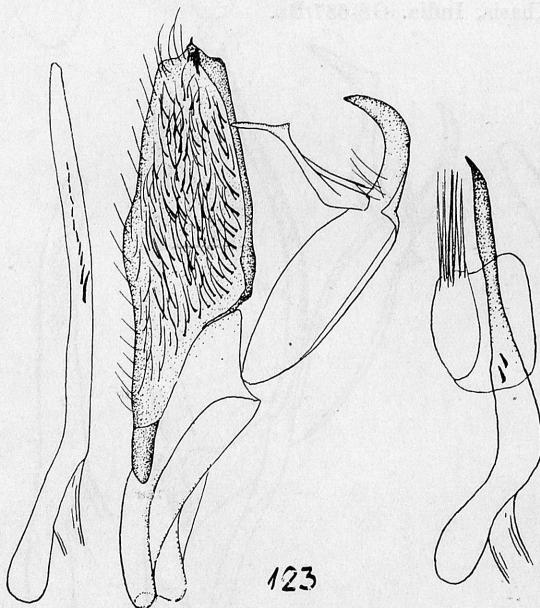
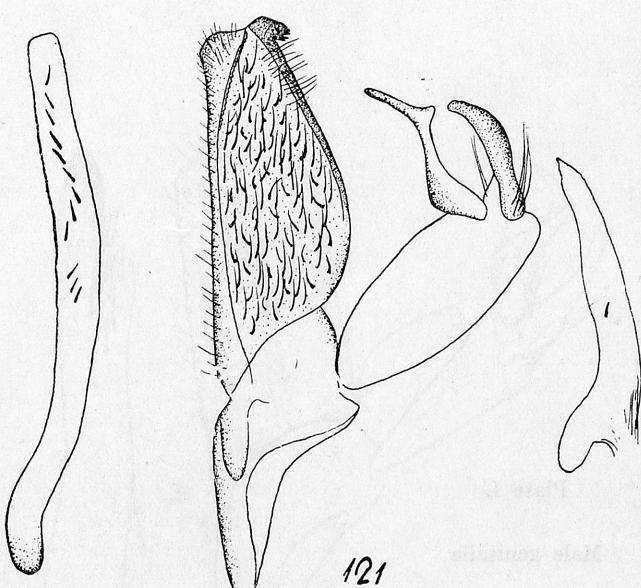


Plate L

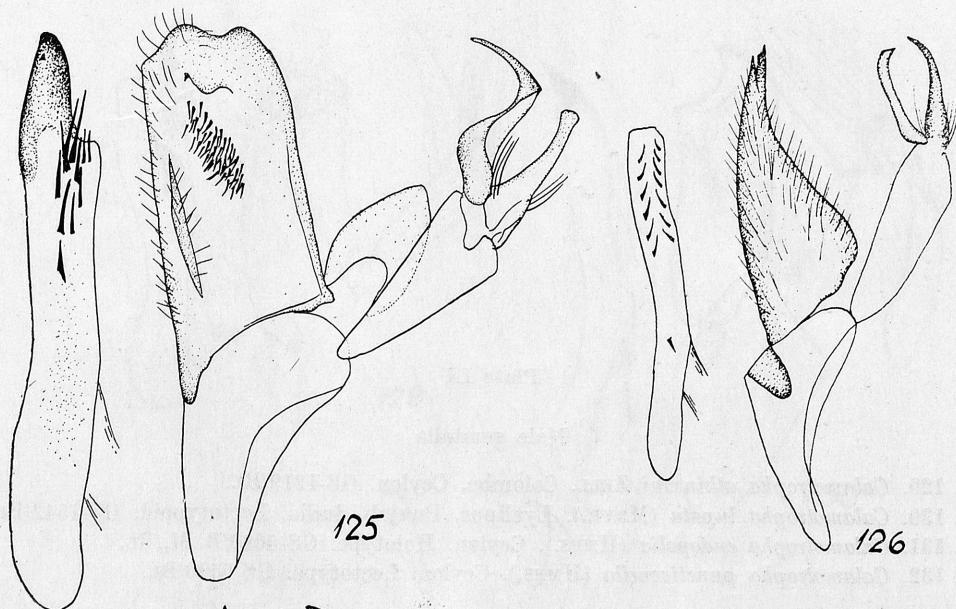
Male genitalia

Fig. 125. *Calamotropha sienkiewiczi* sp. n. China. Typoid. GS-1685/BL.

Fig. 126. *Calamotropha brevistrigella* (CAR.). China. GS-906/BL.

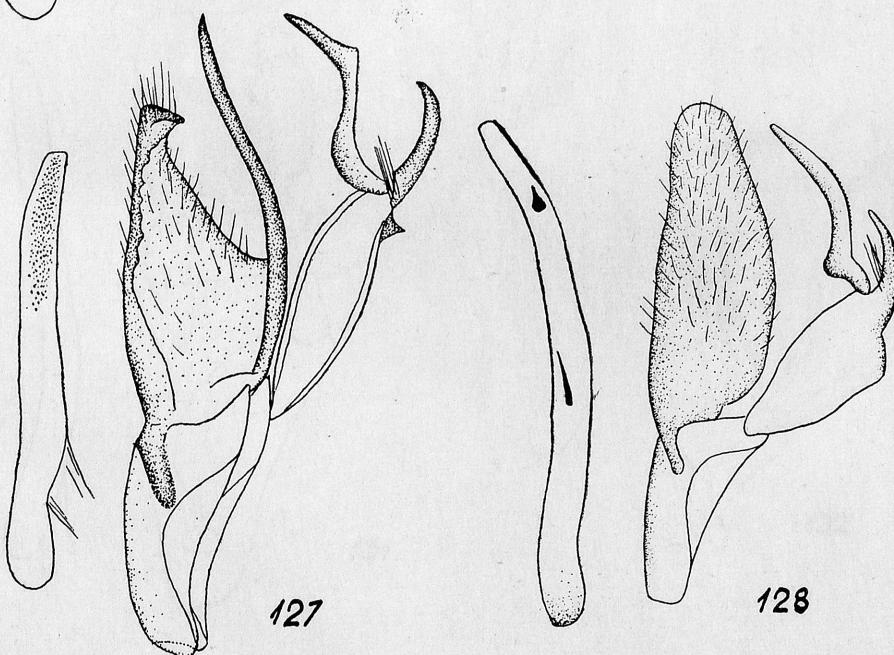
Fig. 127. *Calamotropha sattleri* sp. n. Hinokigama, Formosa. Holotype. GS-1835/BL.

Fig. 128. *Calamotropha latella* (SNELL.). Khasis, India. GS-687/BL.



125

126



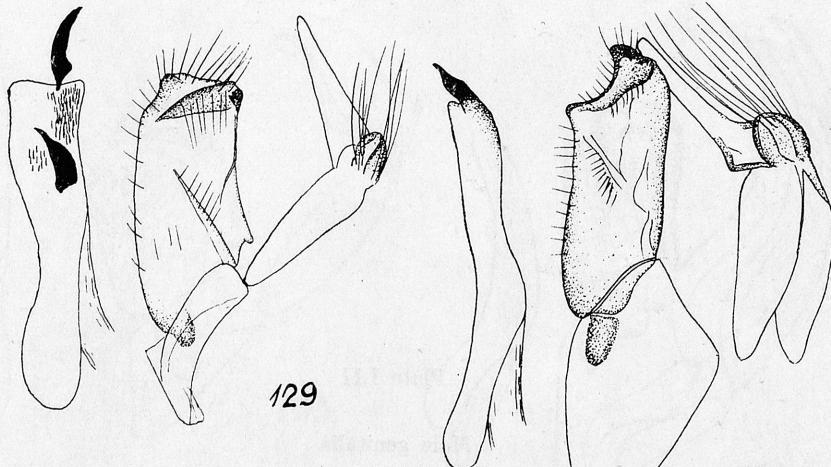
127

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Plate LI

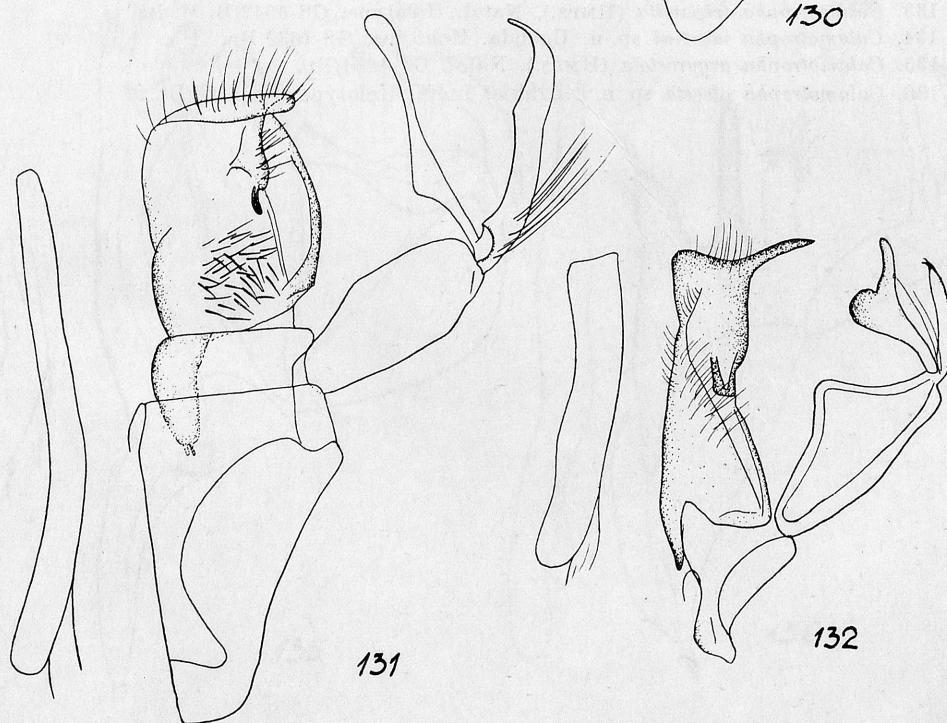
Male genitalia

Fig. 129. *Calamotropha atkinsoni* ZELL. Colombo, Ceylon. GS-1219/BL.  
Fig. 130. *Calamotropha lupata* (MEYR.). Lyallpur, Punjab, India. Lectotypoid. GS-1542/BL.  
Fig. 131. *Calamotropha endopolia* (HMPS.). Ceylon. Holotype. GS-5686/B. M./BL.  
Fig. 132. *Calamotropha punctivenella* (HMPS.). Ceylon. Lectotype. GS-5596/BL.



129

130



131

132

Plate LII

Male genitalia

Fig. 133. *Calamotropha tripartita* (Hmps.). Natal. Holotype. GS-5542/B. M./BL.  
Fig. 134. *Calamotropha martini* sp. n. Uganda. Holotype. GS-1639/BL.  
Fig. 135. *Calamotropha argyrostola* (Hmps.). Natal. GS-1234/BL.  
Fig. 136. *Calamotropha alcesta* sp. n. Nilghiris, India. Holotype. GS-1223/BL.

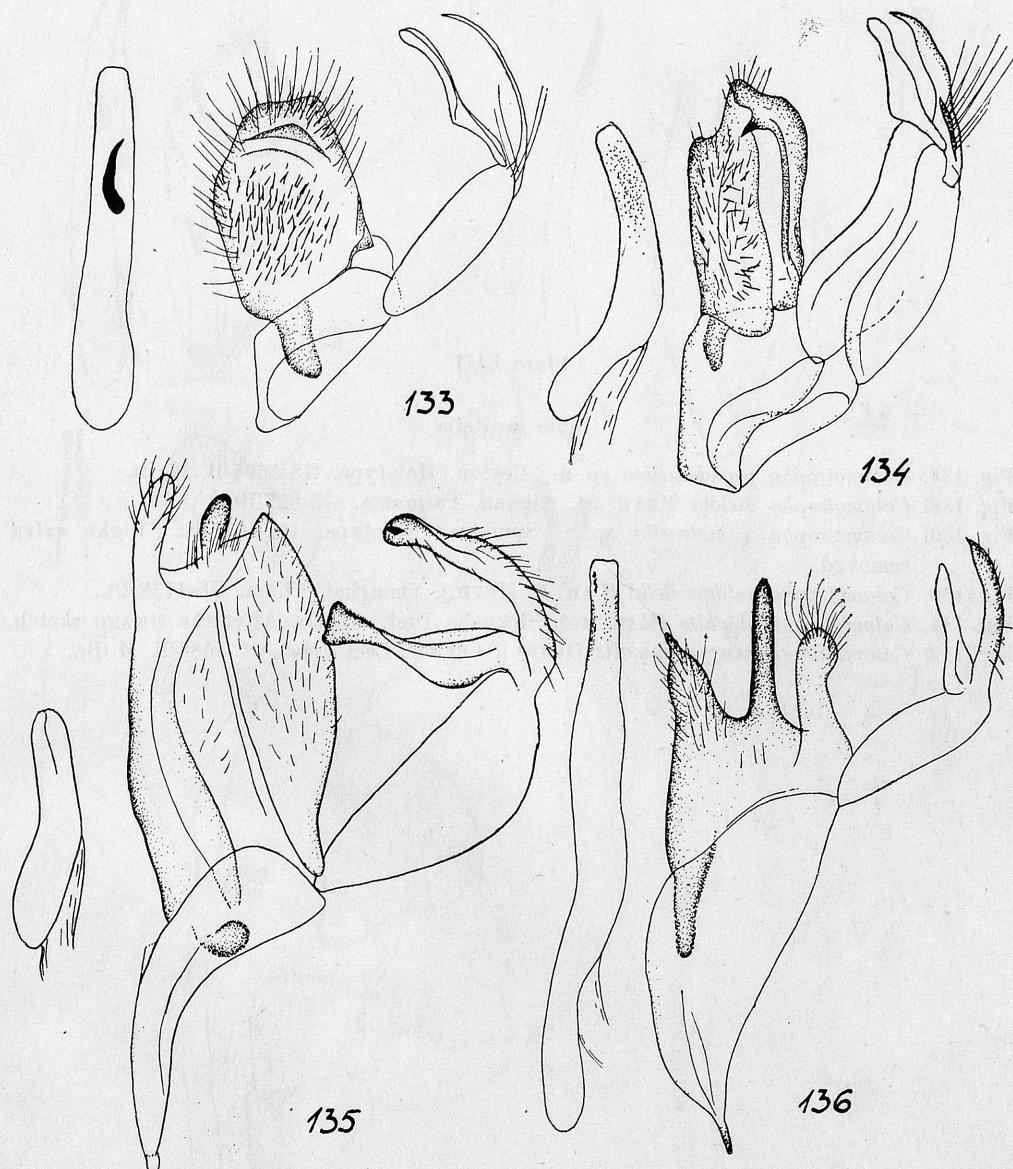


Plate LIII

Male genitalia

Fig. 137. *Calamotropha pseudodielota* sp. n. Ceylon. Holotype. GS-5665/B. M./Bl.

Fig. 138. *Calamotropha dielota* MEYR. St. Aignan, Tasmania. GS-627/Bl.

Fig. 139. *Calamotropha sumatraella* sp. n. Sumatra. Holotype. GS-1611/Bl. Right valva removed.

Fig. 140. *Calamotropha subfamulella* (CAR. & MEYR.). Shanghai, China. GS-1738/Bl.

Fig. 141. *Calamotropha shichito* (MARUMO). Shizuoka Pref., Japan. After the OKANO sketch.

Fig. 142. *Calamotropha neurigrammalis* (HMPS.). Ceylon. Lectotype. GS-5588/B. M./Bl.

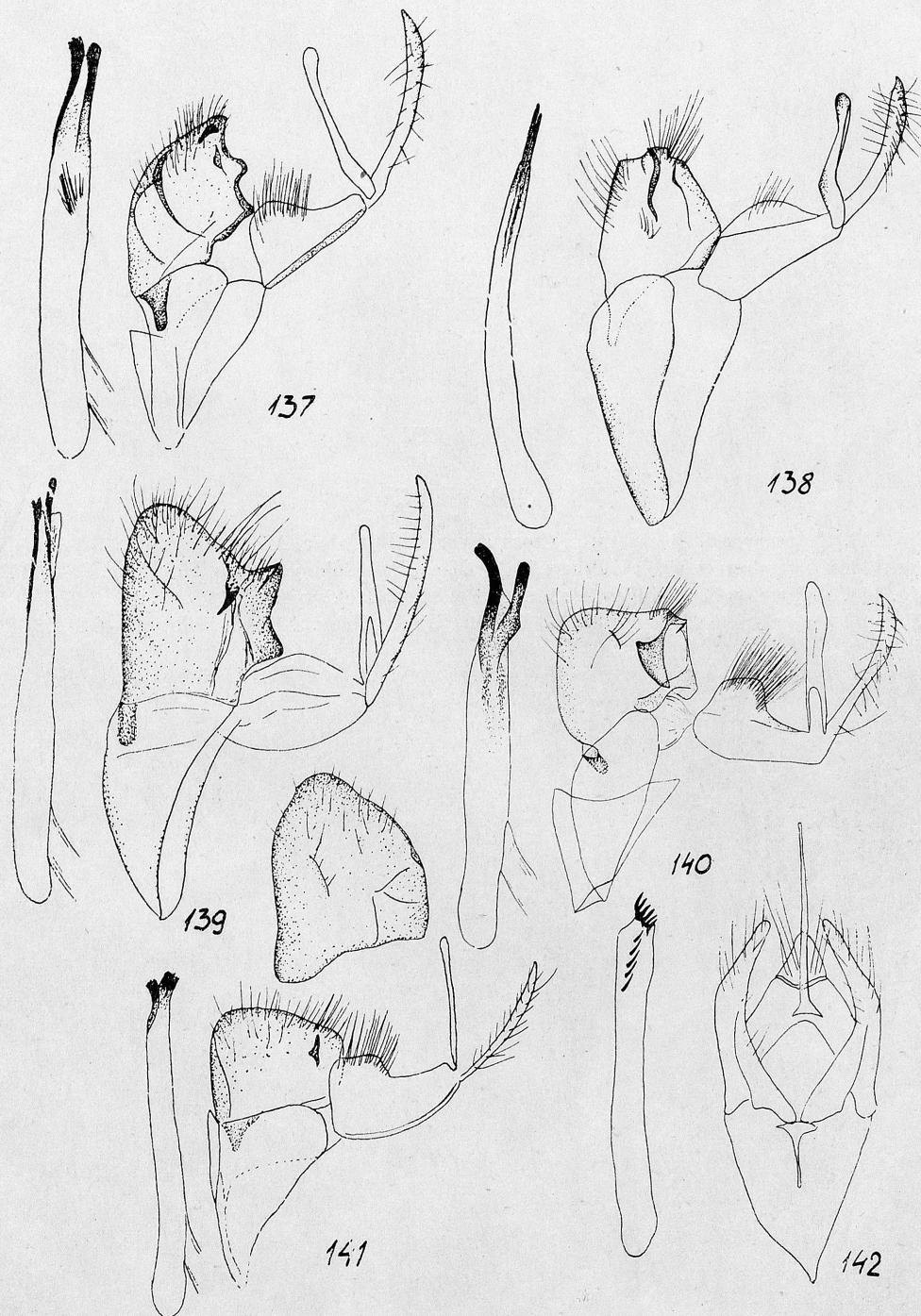
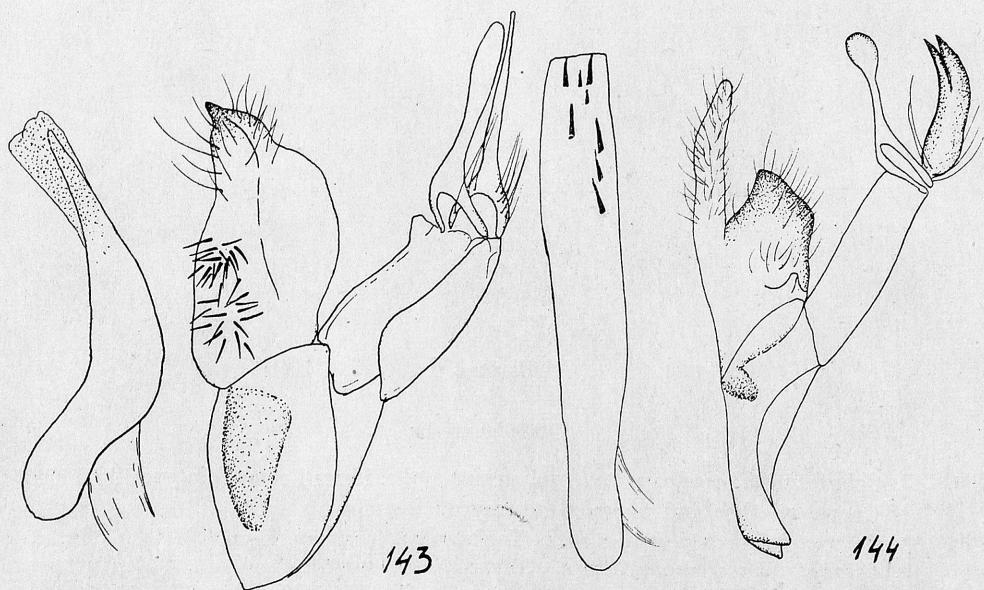


Plate LIV

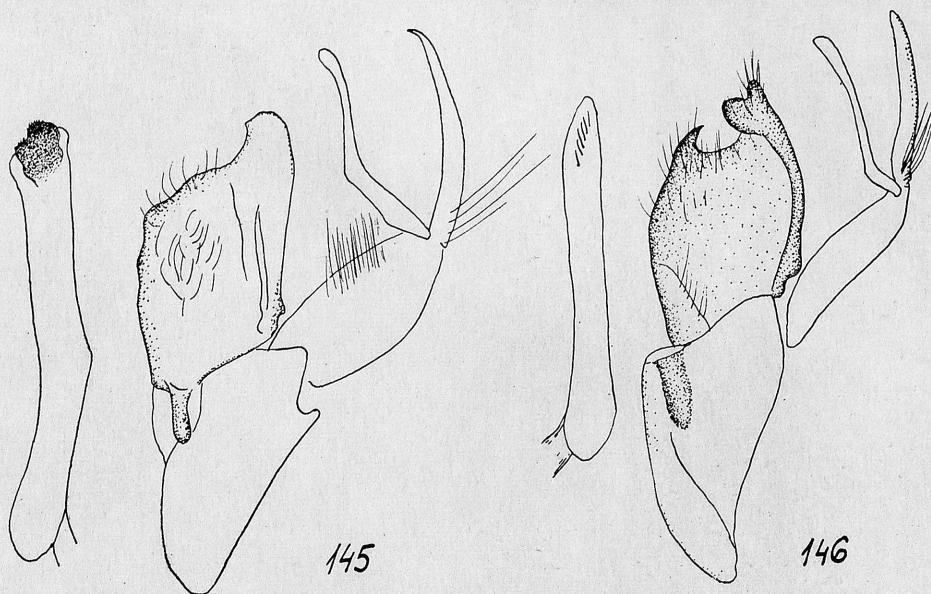
Male genitalia

Fig. 143. *Calamotropha athena* sp. n. Cross River, Old Calabar, Africa. Holotype. GS-1097/BL.  
Fig. 144. *Calamotropha bradleyi* BLESZ. Table Mts., Cape Colony, Africa. Holotype. GS-959/BL.  
Fig. 145. *Calamotropha hierichuntica* ZELL. Palestine. Holotype. GS-2914/B. M.  
Fig. 146. *Calamotropha mimosa* sp. n. Dungu, Upper Uelle, Africa. Holotype. GS-1384/BL.



143

144



145

146

Plate LV

Male genitalia

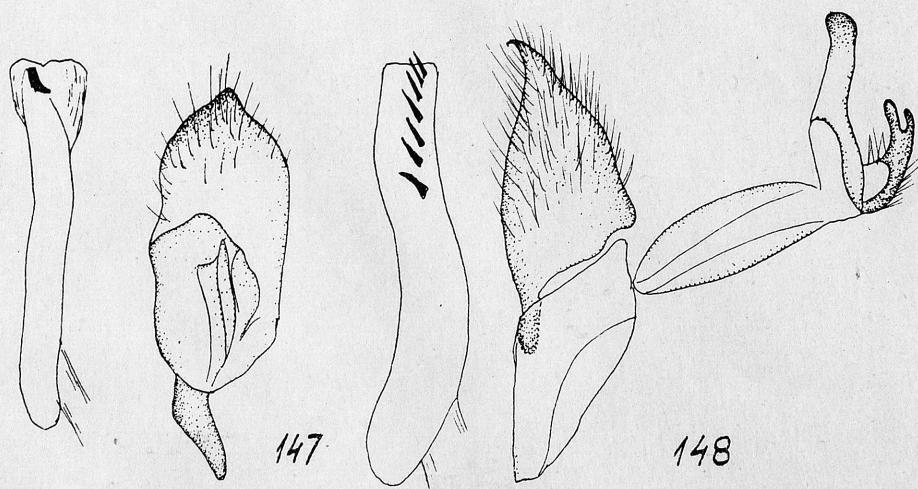
Fig. 147. *Calamotropha megalopunctata* ssp. *minuta* ssp. n. Sierra Leone. Allotype. GS-1666/B M.  
Uncus, gnathos and tegumen destroyed.

Fig. 148. *Calamotropha schönnmanni* sp. n. Tanganyika-Territory. Typoid. GS-1620/B L.

Fig. 149. *Calamotropha diodonta* (HMPS.). Nigeria. GS-1103/B L.

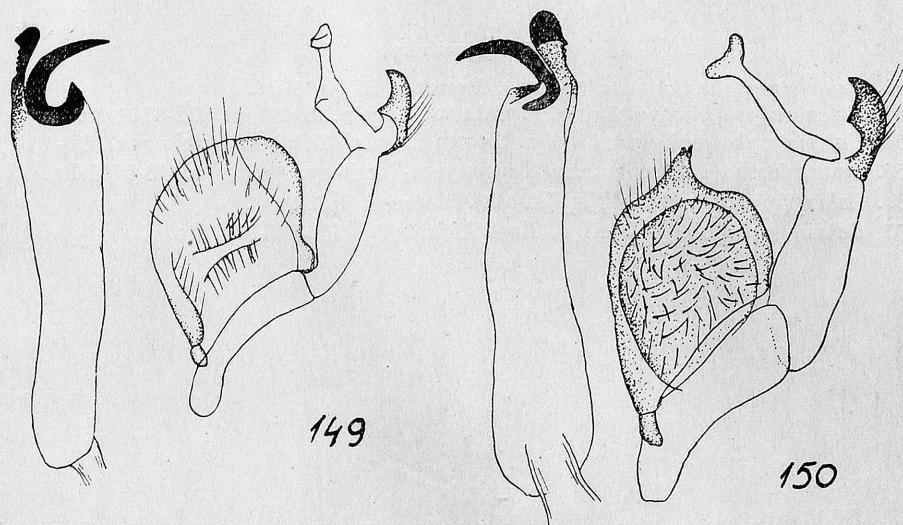
Fig. 150. *Calamotropha kuchleini* sp. n. Tanganyika-Territory. Typoid. GS-1777/B L.

Fig. 151. *Calamotropha kuchleini* sp. n. Tanganyika-Territory. Typoid. GS-1788/B L. Dorsal view.



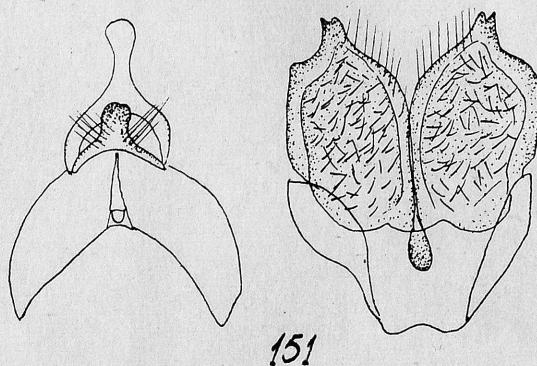
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148



149

150



151

Plate LVI

Male genitalia

Fig. 152. *Calamotropha heliocausta* (WALL.). Pretoria. GS-1060/BL.  
Fig. 153. *Calamotropha bicornutella* sp. n. Calamo, Angola. Holotype. GS-1101/BL.  
Fig. 154. *Calamotropha wallengreni* sp. n. Lower Tugela, Zululand. Holotype. GS-1641/BL.  
Fig. 155. *Calamotropha joskeaeella* sp. n. Tanganyika-Territory. Holotype. GS-1791/BL.  
Fig. 156. *Calamotropha fuscilineatella* (LUCAS). Morocco. Holotype.  
Fig. 157. *Calamotropha cleopatra* sp. n. East Africa. Typoid. GS-1577/BL.

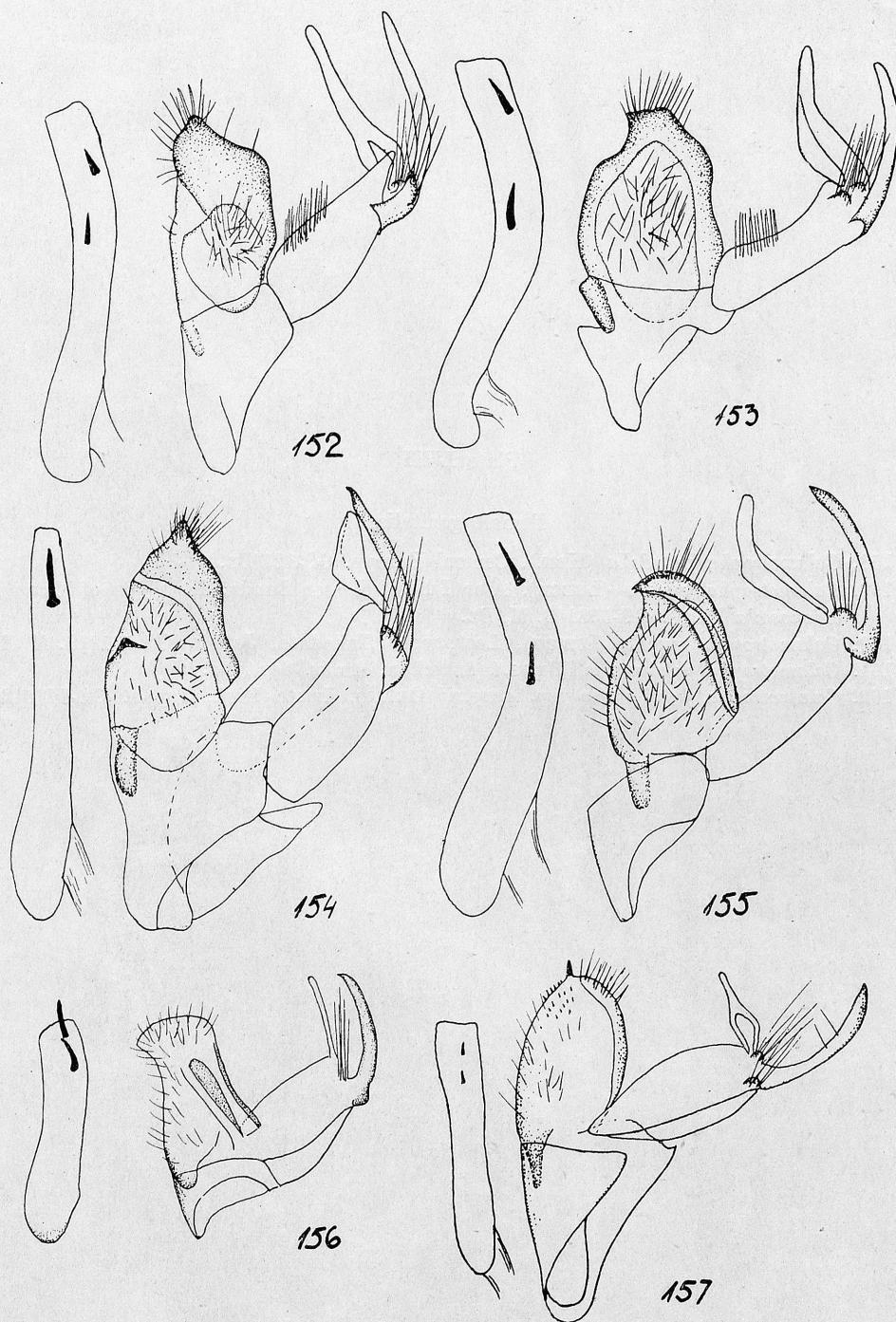


Plate LVII

Female genitalia

Fig. 158. *Calamotropha paludella* (HBN.). Central Europe. GS-127/Br.

Fig. 159. *Calamotropha purella* (LEECH). Alor Island, Lesser Sunda. Holotype of *Crambus chionostola* HMPS. GS-5581/B. M./Br.

Fig. 160. *Calamotropha purella* (LEECH). Lectotype. Hakodate, Japan. GS-5613/B. M./Br.

Fig. 161. *Calamotropha fulvifusalis* (HMPS.). Sutschuan, Amur. Syntype.

Fig. 162. *Calamotropha fulvifusalis* ssp. *asagirii* OKANO. Iwate Pref., Japan. GS-1775/Br.

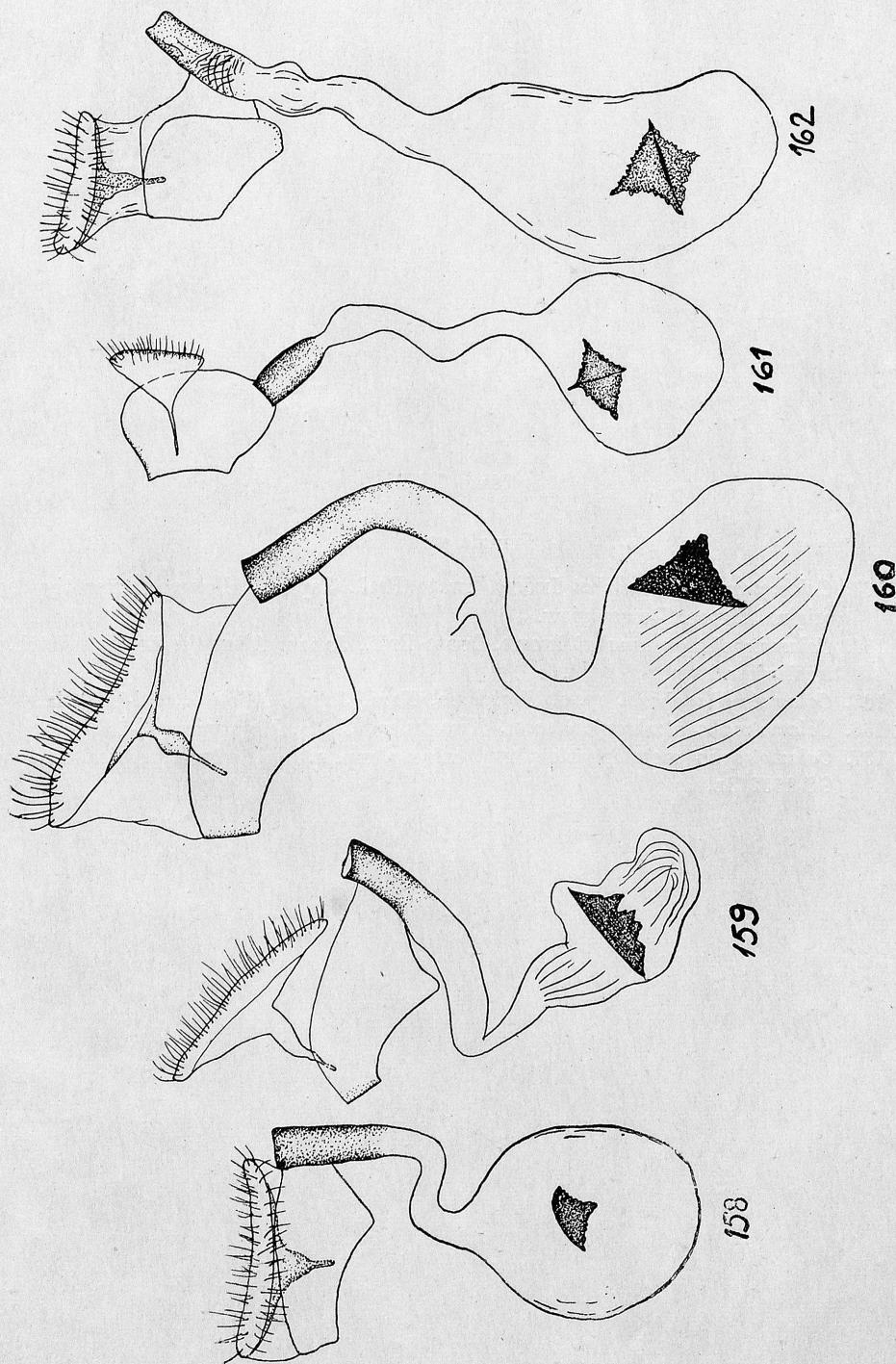


Plate LVIII

Female genitalia

Fig. 163. *Calamotropha yamanakai* INOUE. Iwate Pref., Japan. Allotype. After the INOUE original figure. Dorsal view.

Fig. 164. *Calamotropha yamanakai* INOUE. Iwate Pref., Japan. After the OKANO sketch. Lateral view.

Fig. 165. *Calamotropha okanoi* sp. n. Koriyama, Nara, Japan. Allotype. GS-1623/BL.

Fig. 166. *Calamotropha sienkiewiczi* sp. n. Kwanhsien, China. Holotype. GS-1631/BL.

Fig. 167. *Calamotropha megalopunctata* ssp. *minuta* ssp. n. Gold Coast, Africa. Holotype. GS-1552/BL.

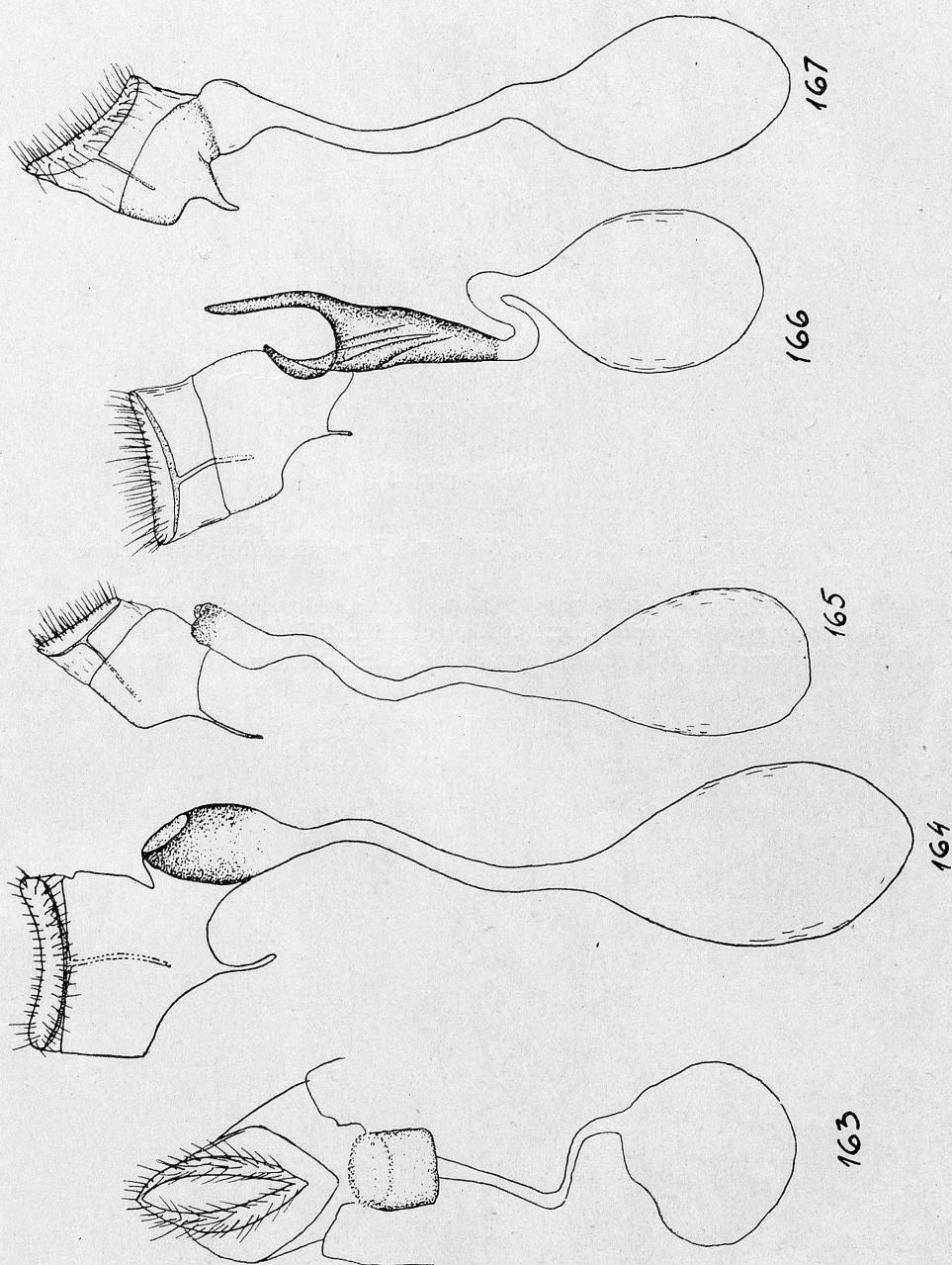


Plate LIX

Female genitalia

Fig. 168. *Calamotropha dielota* MEYR. British East Guinea. GS-1215/BL.

Fig. 169. *Calamotropha subfamulella* (CAR. & MEYR.). Lungtan ad Nanking, China. Lectotype. GS-1730/BL.

Fig. 170. *Calamotropha janusella* sp. n. Salakle, Ganale, Abyssinia. Holotype. GS-1232/BL.

Fig. 171. *Calamotropha corticella* (HMPS.). Khasis, India. GS-1231/BL.

Fig. 172. *Calamotropha franki* (CAR.). Kwanhsien, China. Holotype. GS-1729/BL.

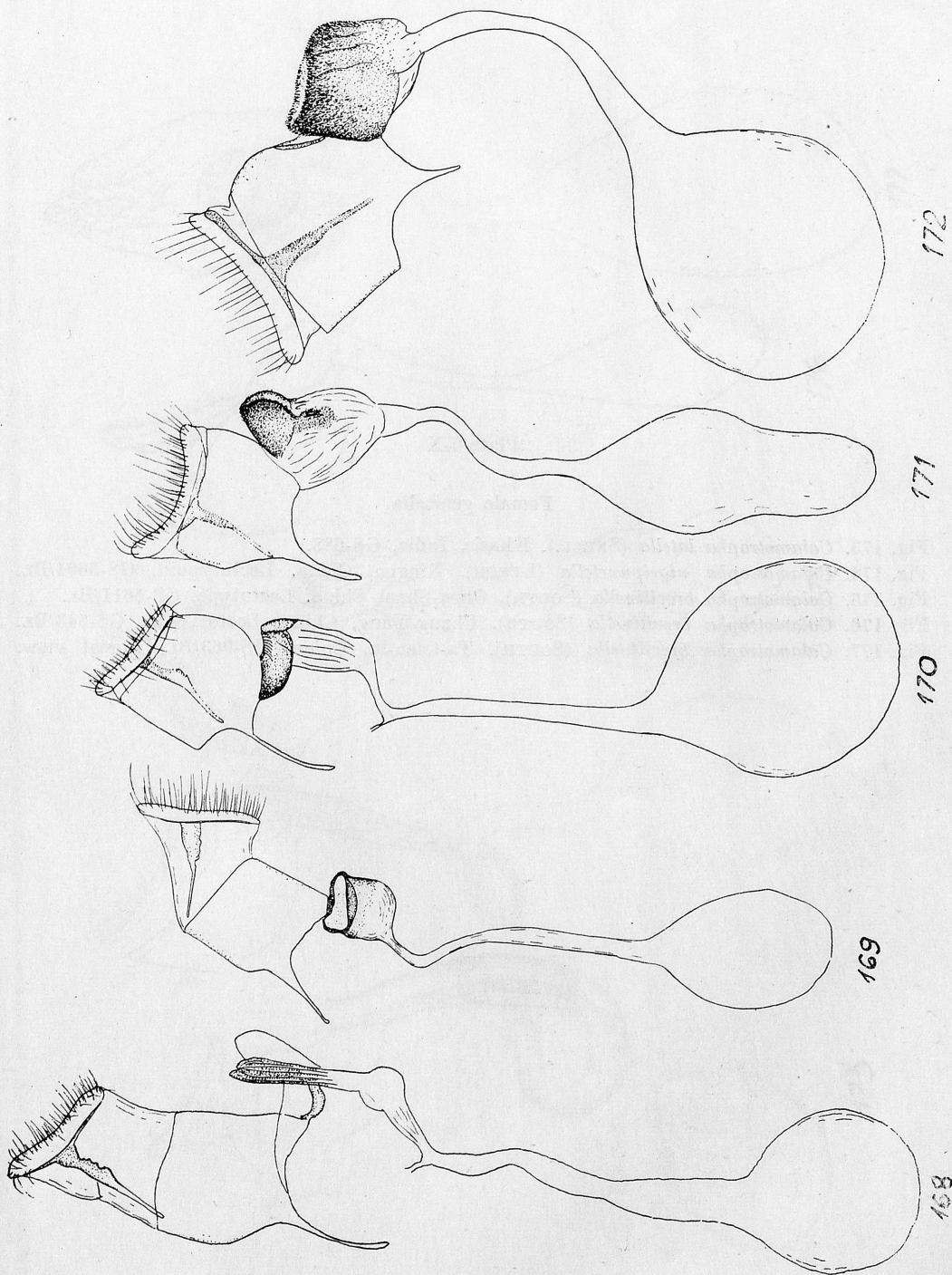


Plate LX

Female genitalia

Fig. 173. *Calamotropha latella* (SNELL.). Khasis, India. GS-688.  
Fig. 174. *Calamotropha nigripunctella* (LEECH). Ningpo, China. Lectotypoid. GS-5604/BL.  
Fig. 175. *Calamotropha brevilinella* (SOUTH). Omei-Shan, China. Lectotype. GS-5611/BL.  
Fig. 176. *Calamotropha brevilinella* (SOUTH). Chang-Yang, China. Lectotypoid. GS-543/BL.  
Fig. 177. *Calamotropha brevilinella* (SOUTH). Ta-tsien-lu, China. GS-963/BL. Dorsal view.

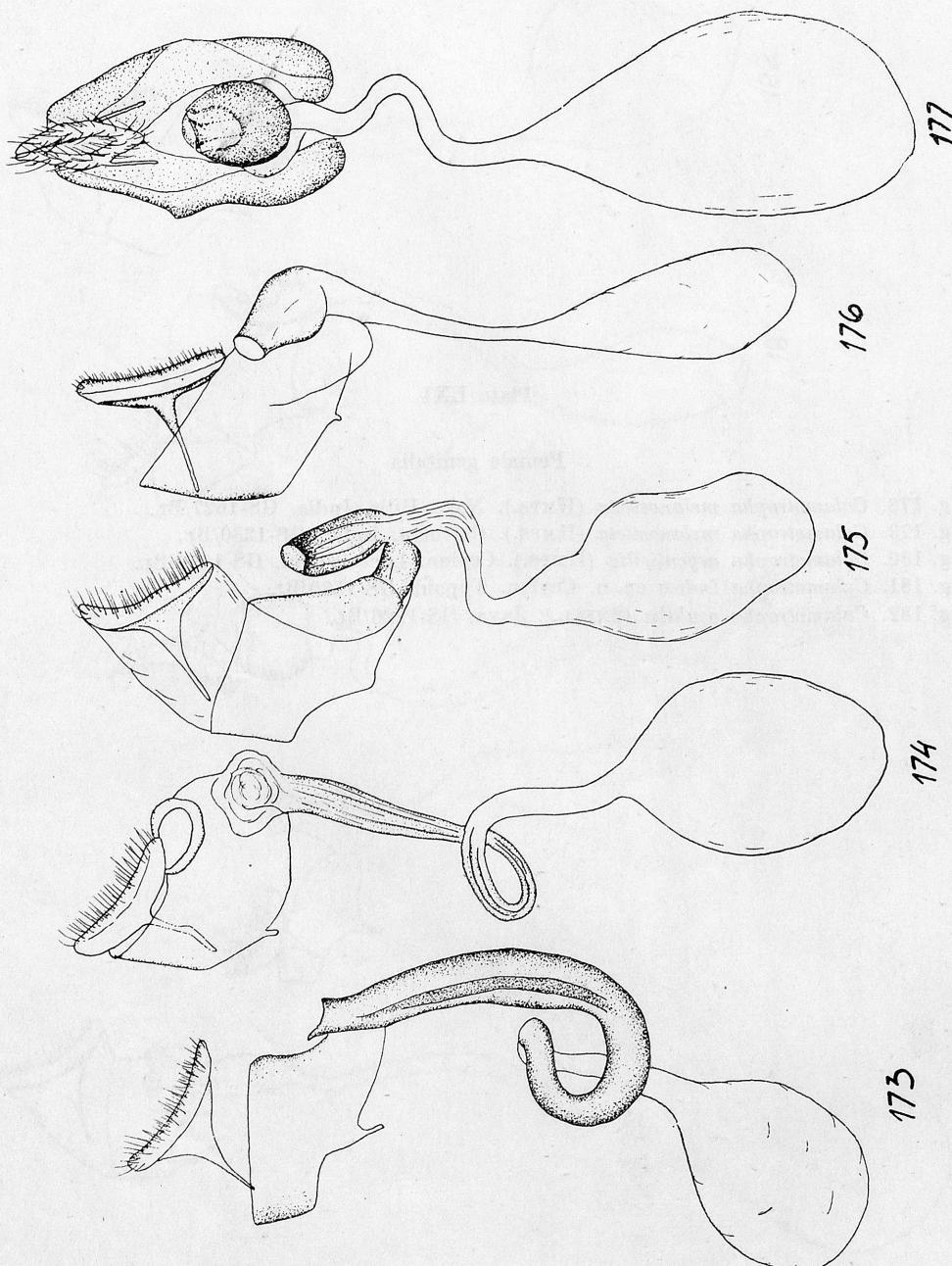


Plate LXI

Female genitalia

Fig. 178. *Calamotropha melanosticta* (HMPS.). Naga Hills, India. GS-1627/BL.  
Fig. 179. *Calamotropha melanosticta* (HMPS.). Calcutta, India. GS-1230/BL.  
Fig. 180. *Calamotropha argenticilia* (HMPS.). Ceylon. Lectotypoid. GS-1556/BL.  
Fig. 181. *Calamotropha indica* sp. n. Ceylon. Typoid. GS-1580/BL.  
Fig. 182. *Calamotropha oculalis* (SNELL.). Java, GS-1226/BL.

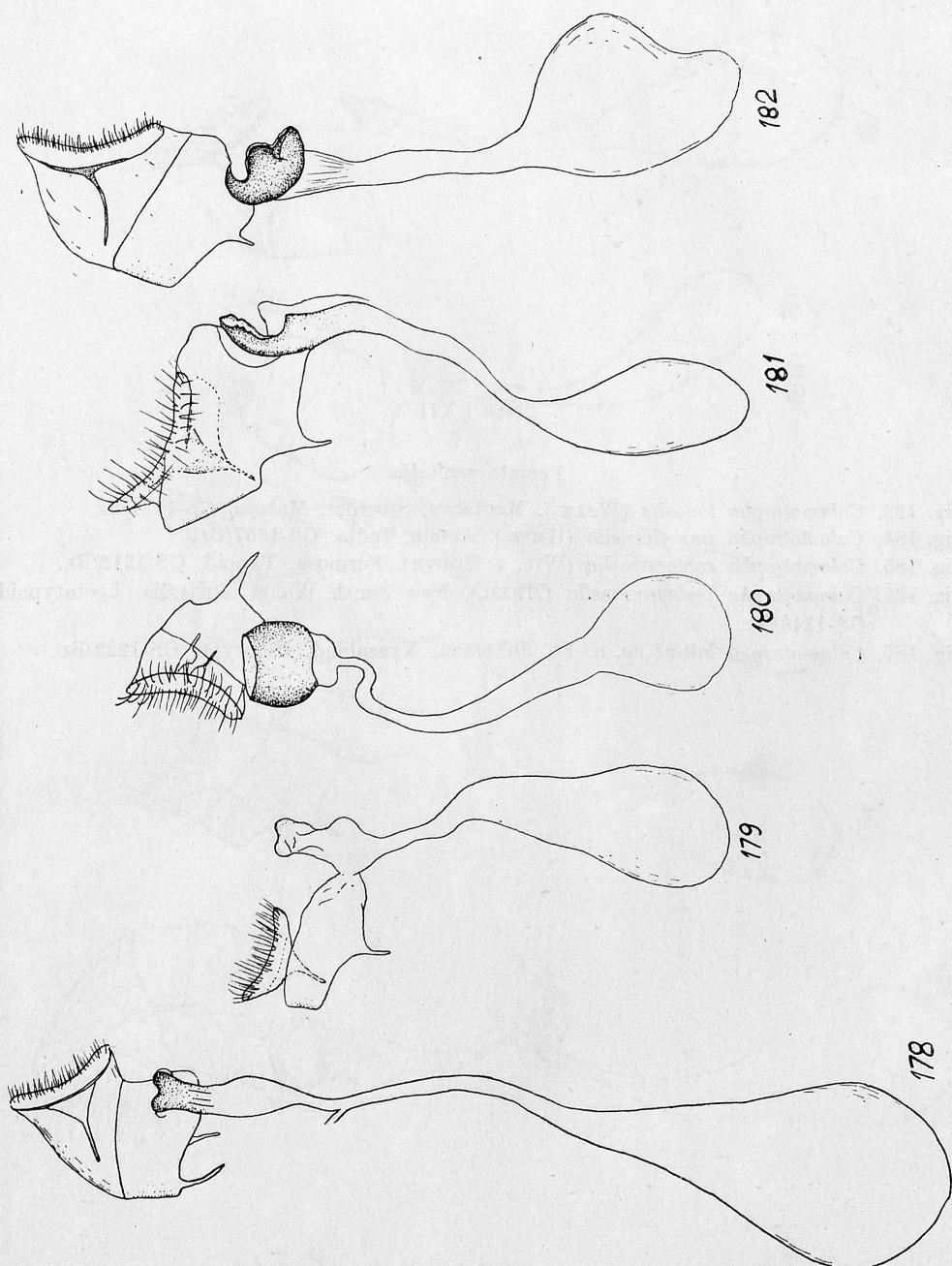


Plate LXII

Female genitalia

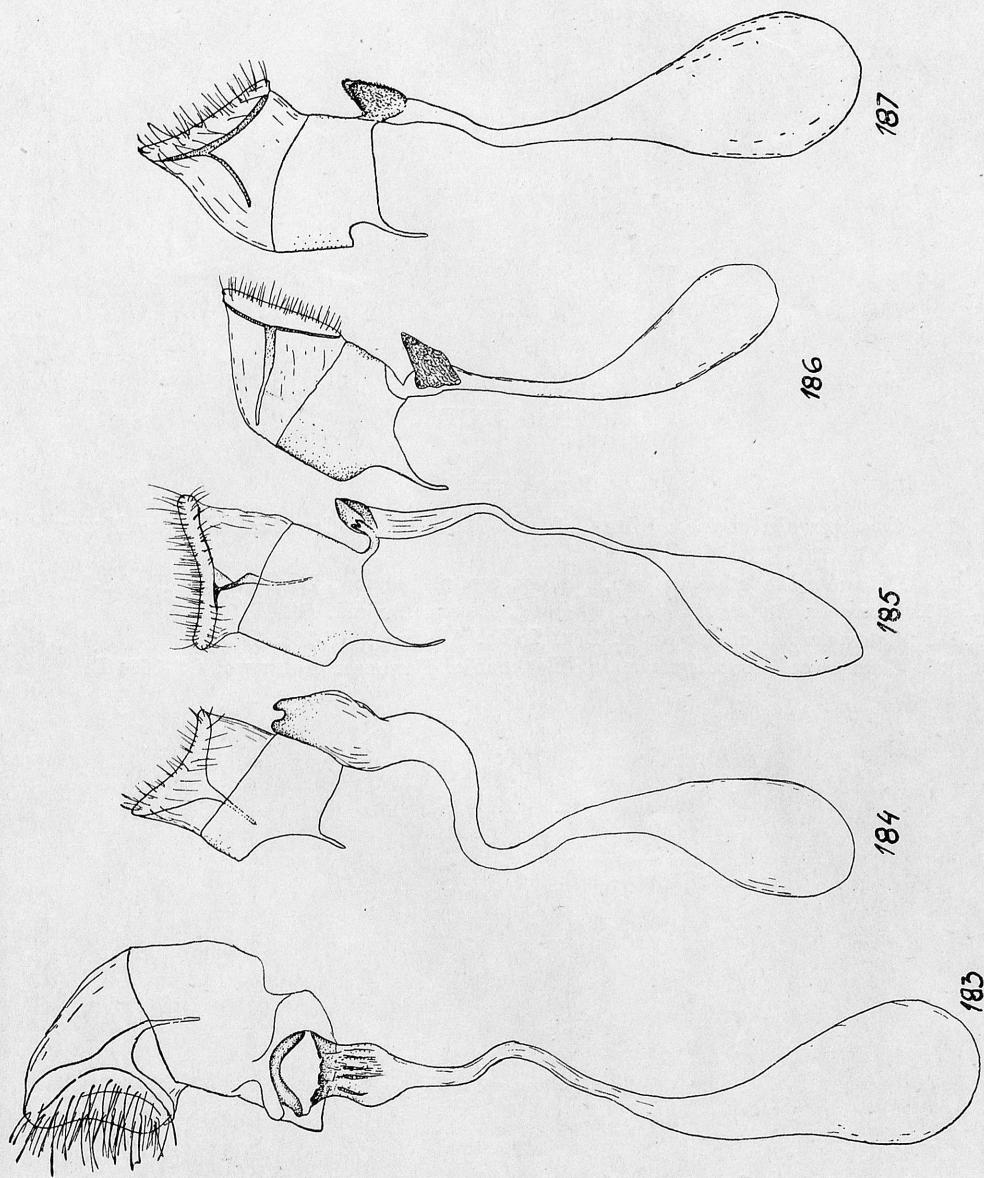
Fig. 183. *Calamotropha tonsalis* (WALK.). Mentawai, Siberoet, Malaya. GS-1221/BL.

Fig. 184. *Calamotropha punctivenella* (HMPS.). Assam, India. GS-1657/BL.

Fig. 185. *Calamotropha subterminella* (WIL. & SOUTH.). Formosa, Typoid. GS-1212/BL.

Fig. 186. *Calamotropha leptogrammella* (MEYR.). New South Wales, Australia. Lectotypoid. GS-1348/BL.

Fig. 187. *Calamotropha lattini* sp. n. Ft. Johnston, Nyasaland. Holotype. GS-1222/BL.



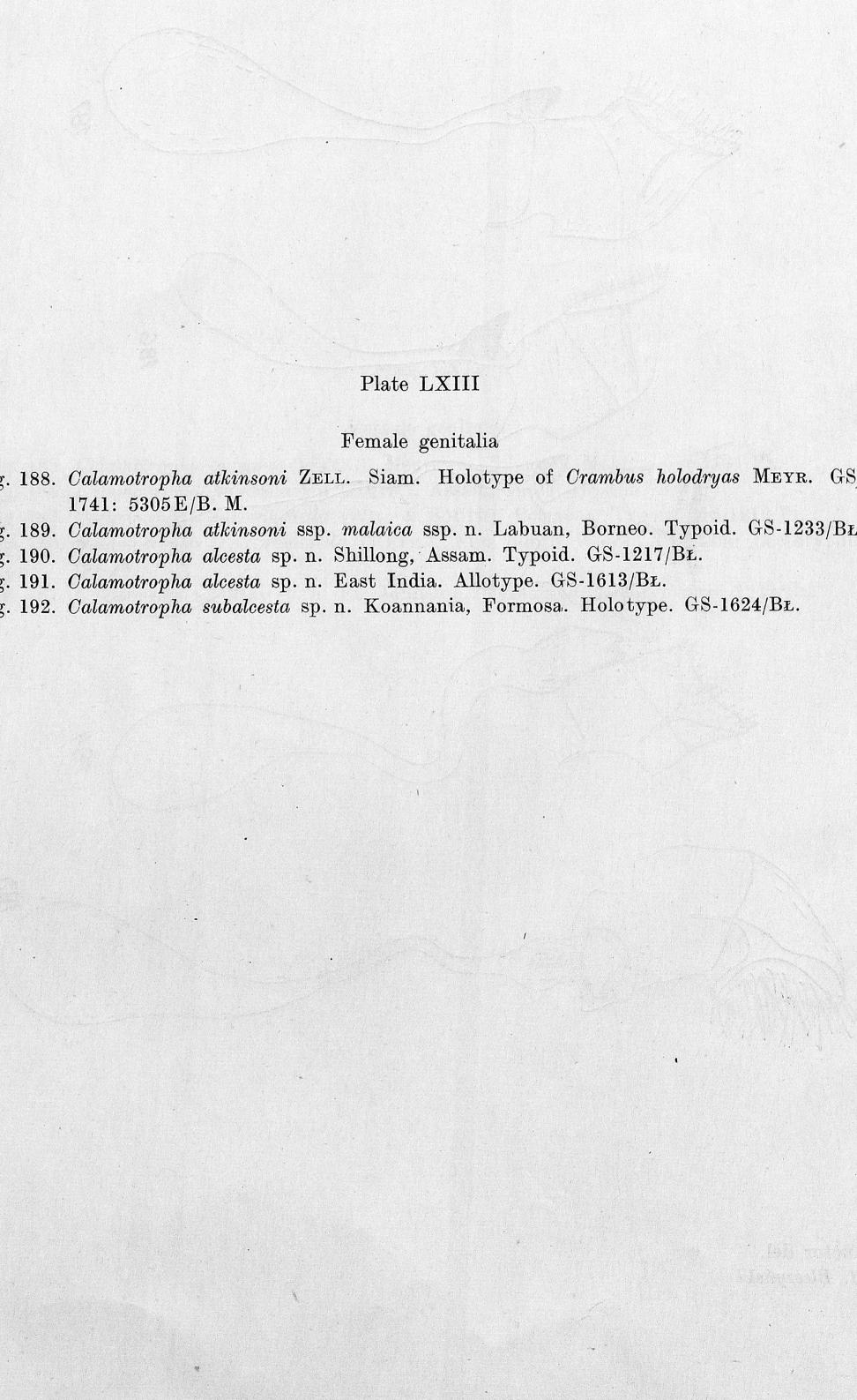


Plate LXIII

Female genitalia

Fig. 188. *Calamotropha atkinsoni* ZELL. Siam. Holotype of *Crambus holodryas* MEYR. GS-1741: 5305 E/B. M.

Fig. 189. *Calamotropha atkinsoni* ssp. *malaica* ssp. n. Labuan, Borneo. Typoid. GS-1233/B.L.

Fig. 190. *Calamotropha alcesta* sp. n. Shillong, Assam. Typoid. GS-1217/B.L.

Fig. 191. *Calamotropha alcesta* sp. n. East India. Allotype. GS-1613/B.L.

Fig. 192. *Calamotropha subalcesta* sp. n. Koannania, Formosa. Holotype. GS-1624/B.L.

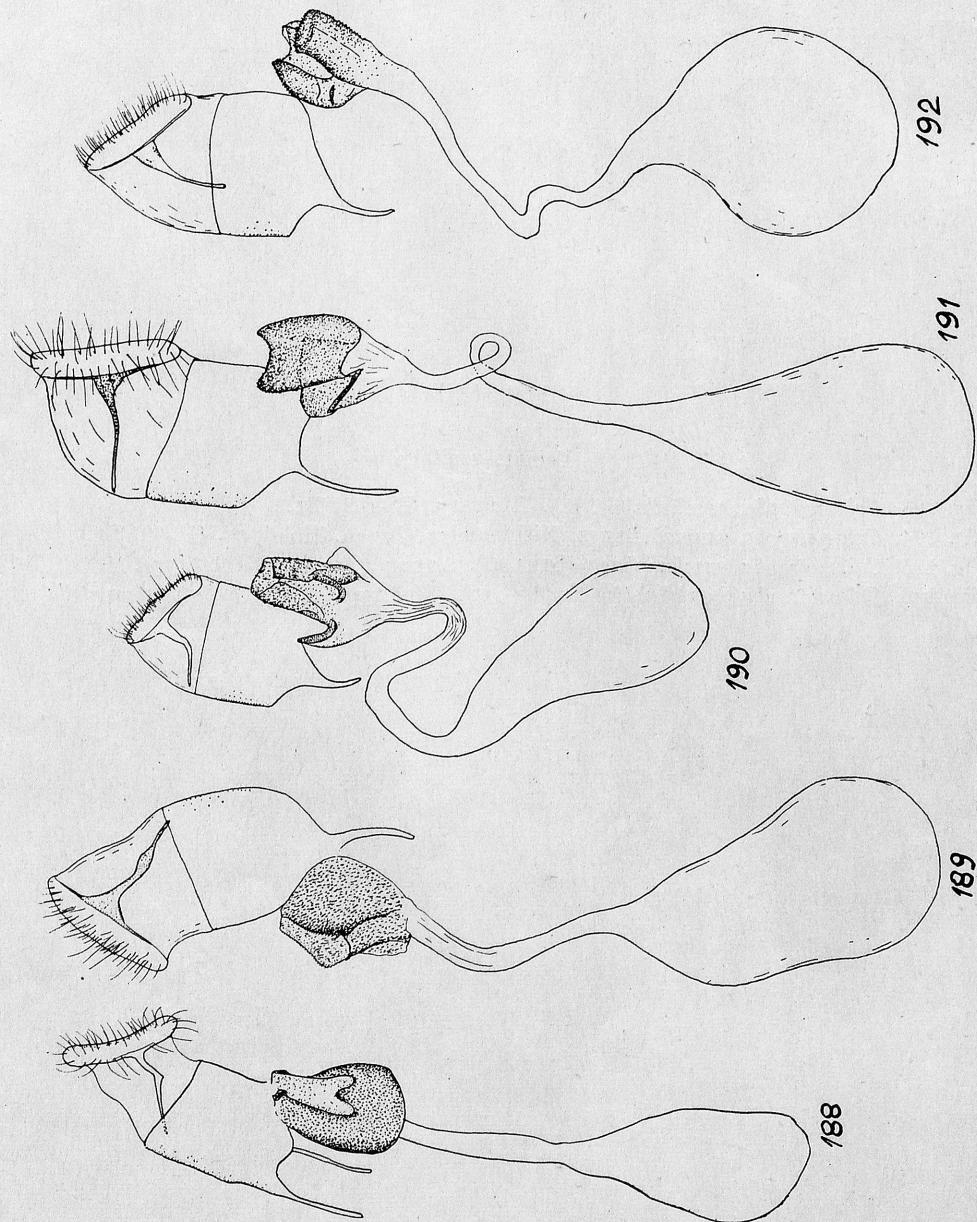


Plate LXIV

Female genitalia

Fig. 193. *Calamotropha aureliella* (F. R.). Hungary. GS-1591/BL.

Fig. 194. *Calamotropha azumai* BRESZ. Nichinomiya, Japan. Holotype. GS-601/BL.

Fig. 195. *Calamotropha arachnophaga* (STRAND). Anping, Formosa. Lectotype. GS-1947/BL.

Fig. 196. *Calamotropha hierichuntica* ZELL. Syria. Holotype of *Calamotropha orontella* RAG.

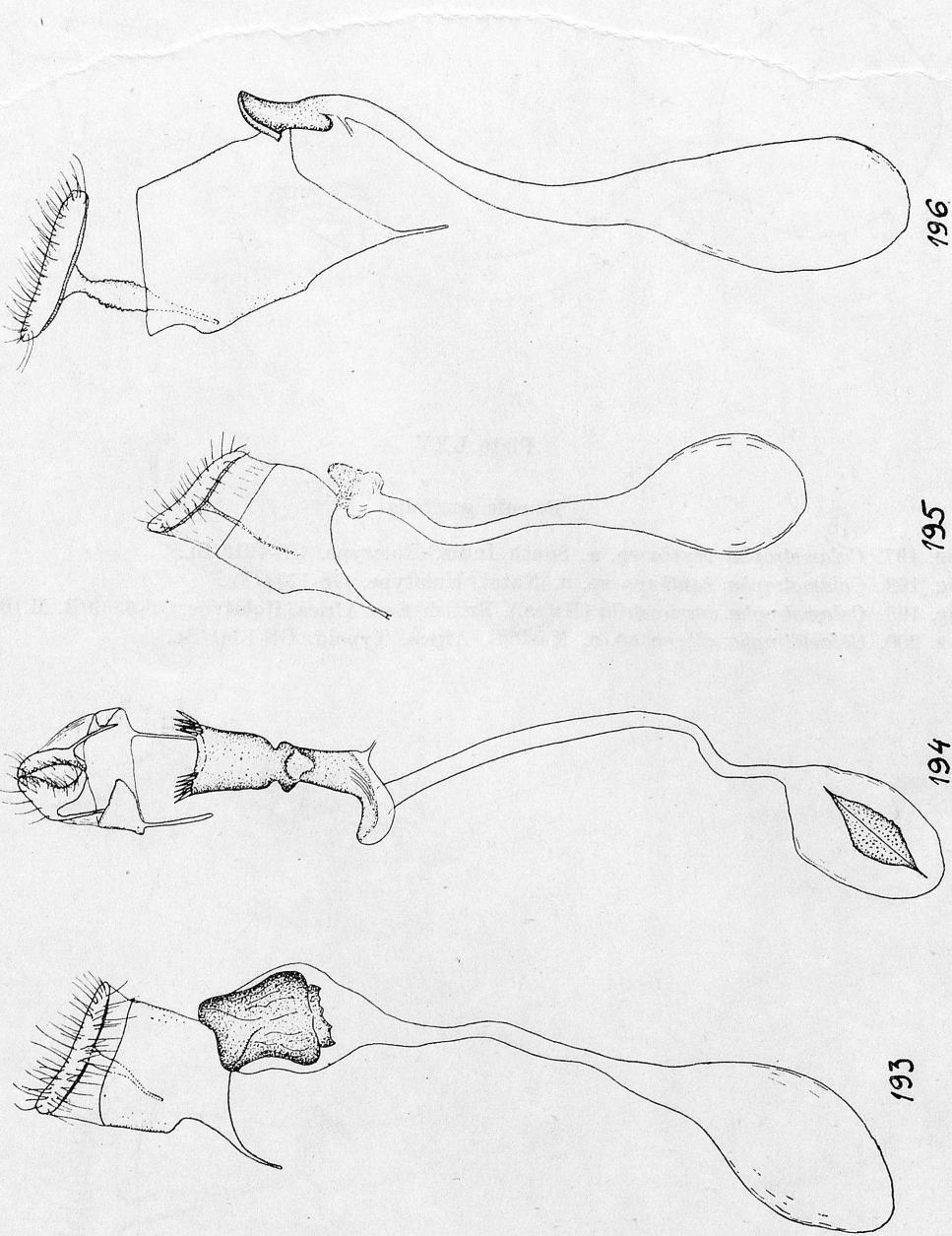


Plate LXV

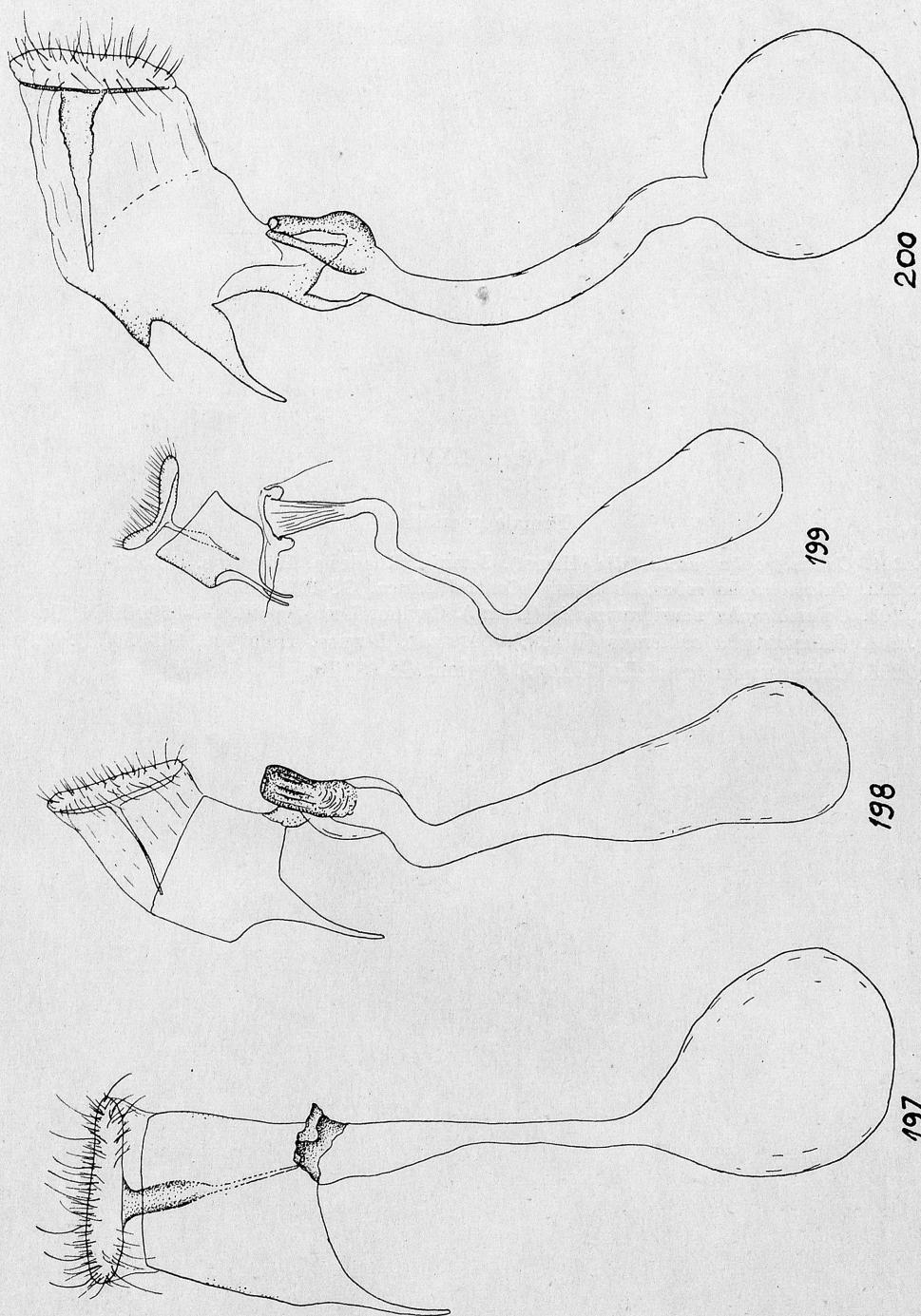
Female genitalia

Fig. 197. *Calamotropha venera* sp. n. South India. Holotype. GS-1218/BL.

Fig. 198. *Calamotropha xanthypa* sp. n. Natal. Holotype. GS-1574/BL.

Fig. 199. *Calamotropha niveicostella* (HMPS.). British East Africa. Holotype. GS-5559/B. M./BL.

Fig. 200. *Calamotropha athena* sp. n. Masindi, Africa. Typoid. GS-1361/BL.



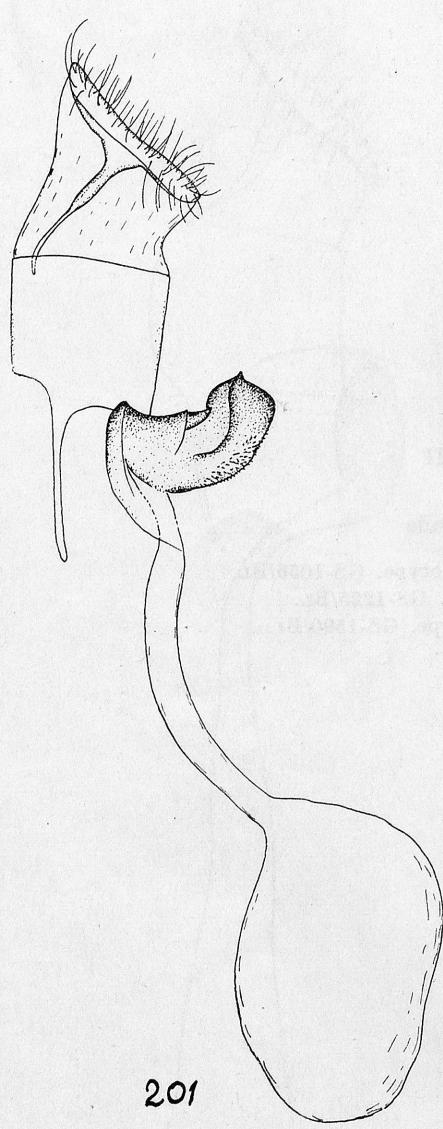
Auctor del.

St. Bleszyński

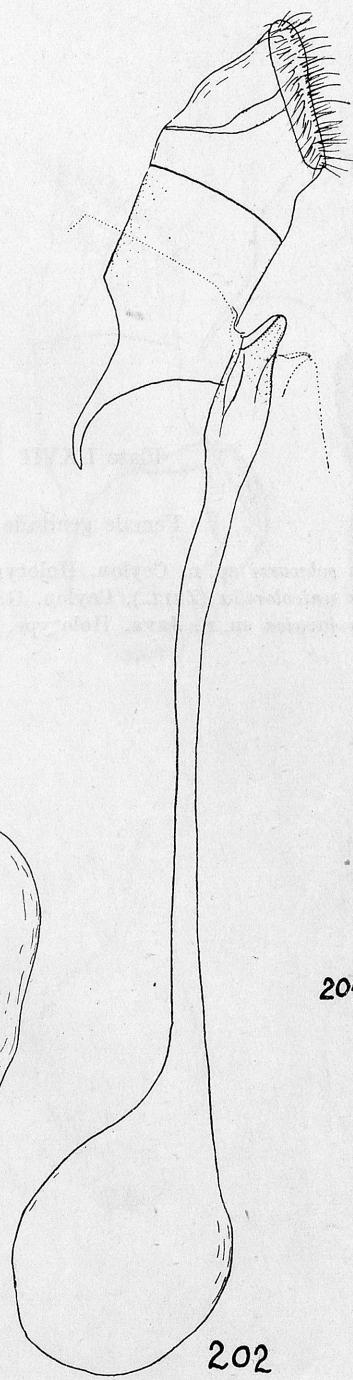
Plate LXVI

Female genitalia

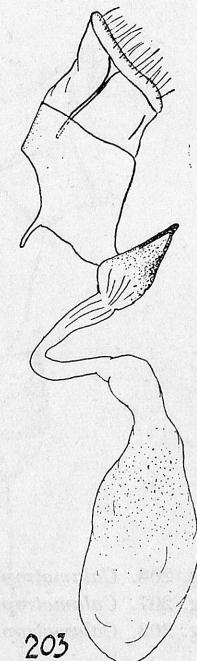
Fig. 201. *Calamotropha fuscivittalis* (HMPS.). Serenje, Rhodesia. Holotype. GS-5520/B. M./Br.  
Fig. 202. *Calamotropha robustella* SNELL. Central Africa. GS-1925/Br.  
Fig. 203. *Calamotropha neurigrammalis* (HMPS.). Ceylon. Lectotypoid. GS-5590/B. M./Br.  
Fig. 204. *Calamotropha oblitterans* (WALK.). Sarawak, Borneo. Holotype. GS-5593/B. M./Br.  
Fig. 205. *Calamotropha famulella* (WALK.). Ceylon. GS-683/Br.



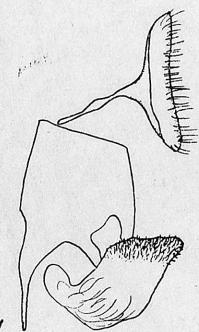
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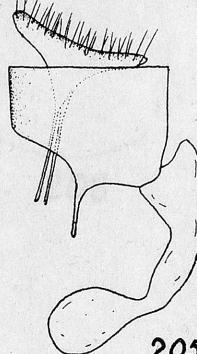
202



203



204



205

Plate LXVII

Female genitalia

Fig. 206. *Calamotropha schwarzi* sp. n. Ceylon. Holotype. GS-1056/BL.

Fig. 207. *Calamotropha unicolorella* (ZELL.). Ceylon. GS-1225/BL.

Fig. 208. *Calamotropha javaica* sp. n. Java. Holotype. GS-1590/BL.

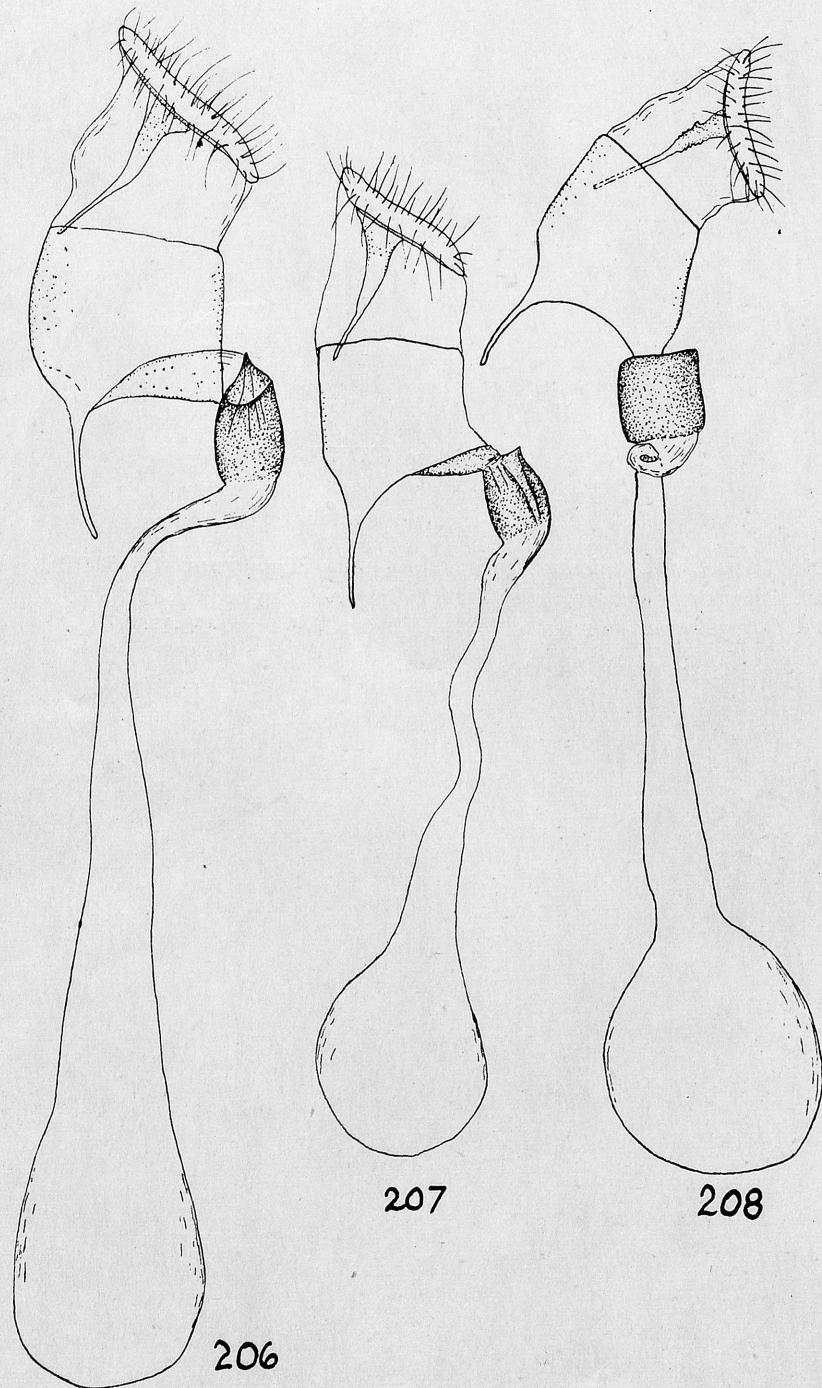


Plate LXVIII

Female genitalia

Fig. 209. *Calamotropha uniclorella* (ZELL.). Manilla, Philippines. GS-1334/BL.  
Fig. 210. *Calamotropha uniclorella* (ZELL.). Galgama, Ceylon. GS-1280/BL.  
Fig. 211. *Calamotropha uniclorella* (ZELL.). India. Holotype. GS-1780/BL.

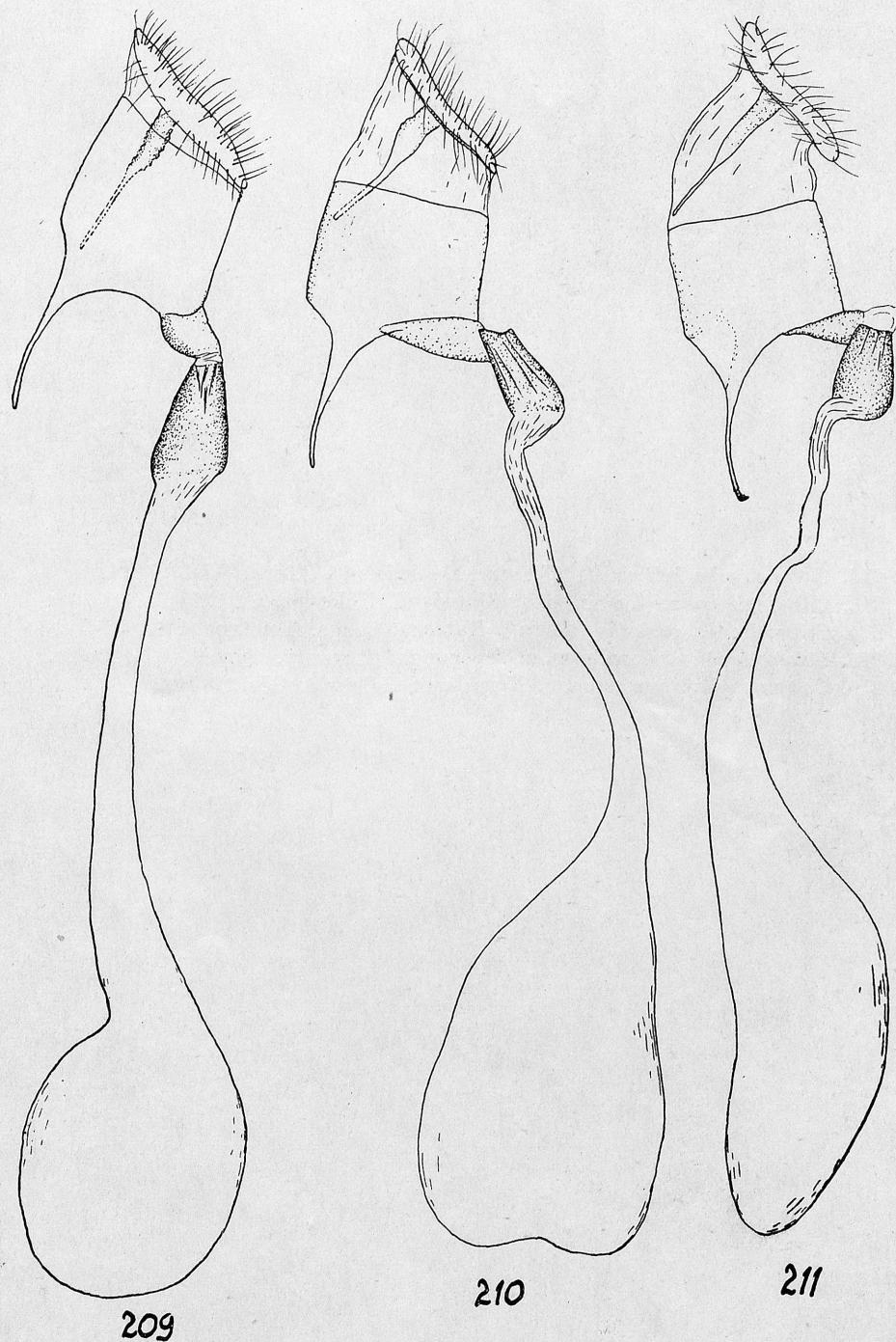


Plate LXIX

Female genitalia

Fig. 212. *Calamotropha heliocausta* (WALL.). Mashonaland, Africa. GS-1227/B.L.  
Fig. 213. *Calamotropha agryppina* sp. n. Nyasaland. Holotype. GS-1228/B.L.  
Fig. 214. *Calamotropha psaltrias* (MEYR.). Katanga, Congo. Holotype. GS-1637/B.L.  
Fig. 215. *Calamotropha joskeaeella* sp. n. Tanganyika-Territory. Typoid. GS-1800/B.L.  
Fig. 216. *Calamotropha danutae* sp. n. Nyasaland. Holotype. GS-1268/B.L.

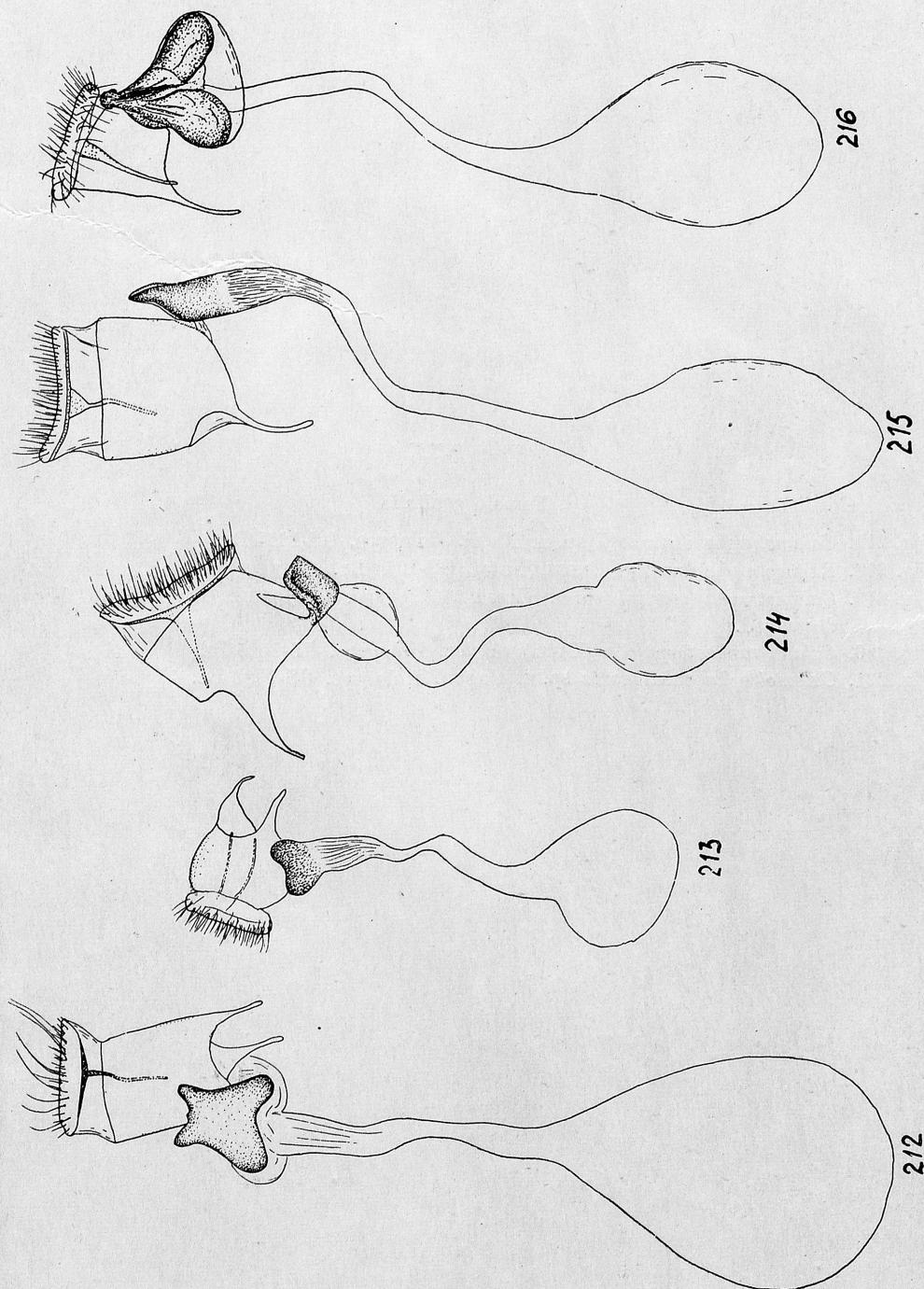


Plate LXX

Female genitalia

Fig. 217. *Calamotropha diakonoffi* sp. n. Natal. Holotype. GS-1661/Bl.

Fig. 218. *Calamotropha bradleyi* BŁESZ. Natal. GS-1061/Br.

Fig. 219. *Calamotropha martini* sp. n. Uganda. Allotype. GS-1640/B. M. Genitalia heavily destroyed.

Fig. 220. *Calamotropha torpidella* (ZELL.). Africa. Holotype. GS-1585/Bl.

Fig. 221. *Calamotropha subdiodonta* sp. n. Gabon. Holotype. GS-1383/Bl.

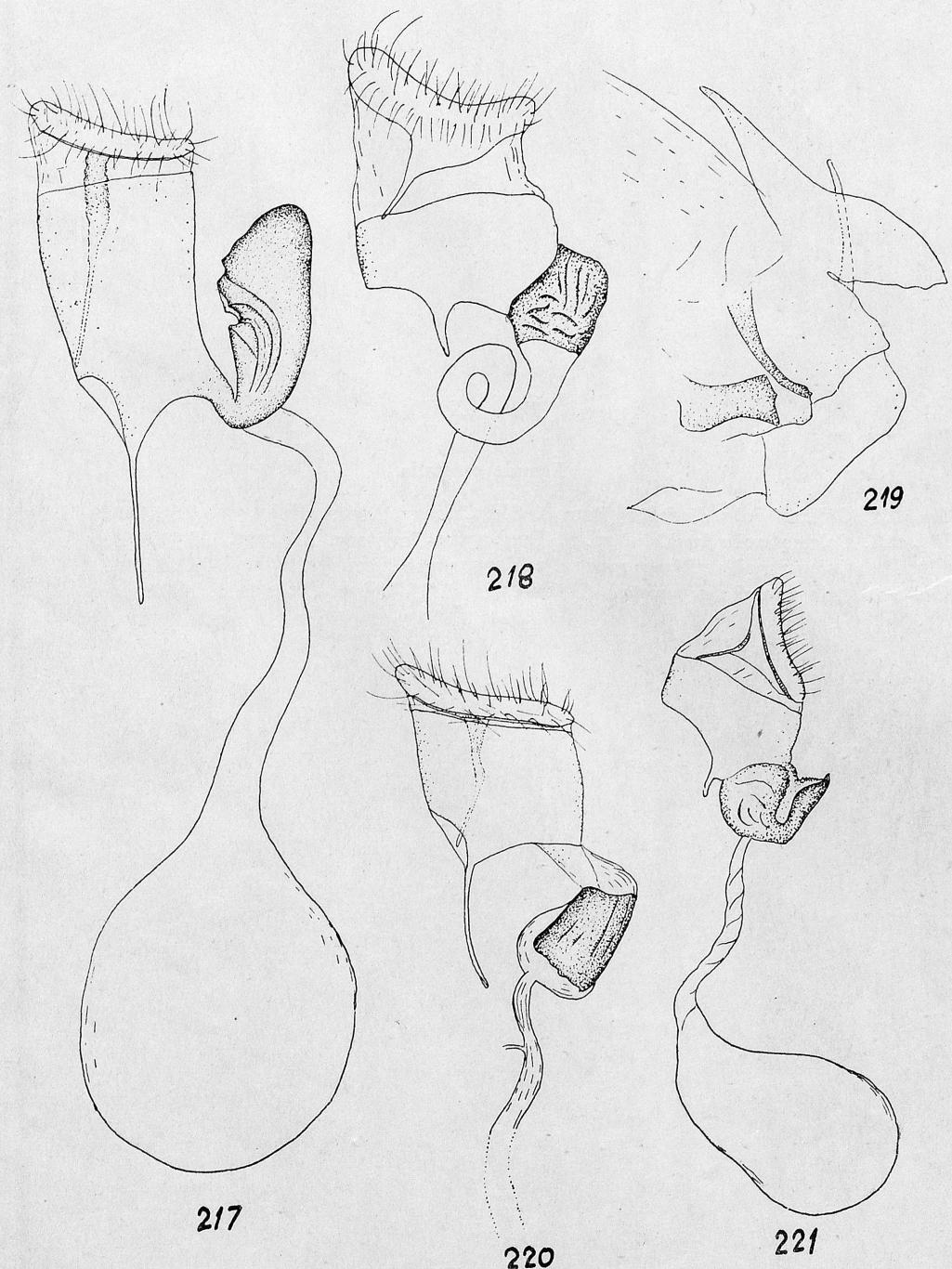
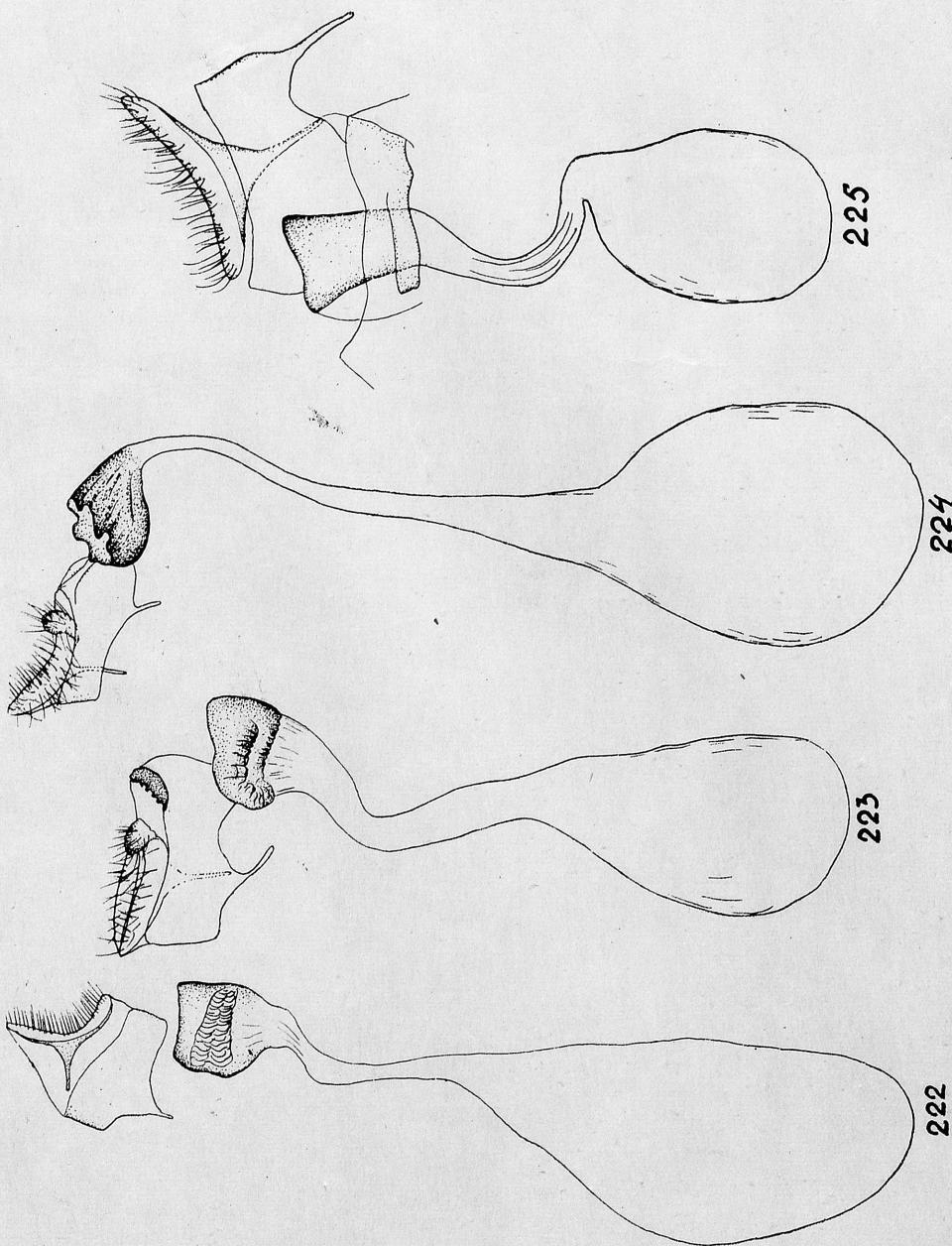


Plate LXXI

Female genitalia

Fig. 222. *Calamotropha diodonta* (HMPS.). Old Calabar, Africa. Holotype. GS-5554/B. M./BL.  
Fig. 223. *Calamotropha kuchleini* sp. n. Tanganyika-Territory. Allotype. GS-1795/BL.  
Fig. 224. *Calamotropha schönnmanni* sp. n. Tanganyika-Territory. Typoid. GS-1787/BL.  
Fig. 225. *Calamotropha argyrostola* (HMPS.). Natal. Holotype. GS-5564/B. M./BL.



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